



Navneet Education Society's

NAVNEET COLLEGE
OF COMMERCE & SCIENCE

Recognised under Section 2(f) of the UGC Act, 1956

University Circular on Tutorials and Notice, Syllabus and Attendance of Tutorials

UNIVERSITY OF MUMBAI

No.Aff./Recog./ 402 of 1998

CIRCULAR:-

In supersession of this office Circulars No.Aff./Recog./481. dated 26th October, 1998 and No.Aff./Recog./195, dated 1st April, 1985, the Management Council at its meeting held on 29th August, 1998, vide item No.37 considered the proposal which was placed before the Academic Council at its meeting held on 26th June, 1998, about the draft ordinance relating to the minimum number of students for practical works/tutorial works prescribed in the different subjects of the B.A., B.Sc. and B.Com. degree course and resolved as under :-

that the Ordinance relating to the minimum number of students for practical works/tutorial works be as under :-

0.3920 The following shall be the number of students in the batches for practical work/tutorial work for a division of 100 students :-

- | | |
|--|--|
| 1) For Practical work in the subjects other than the subjects of Biological Sciences | 2) For practical work in the subjects of Biological Sciences |
|--|--|

1st batch 1-25 students	1st batch 1-20 students
2nd batch 26-45 students	2nd batch 21-35 students
3rd batch 46-65 students	3rd batch 36-50 students
4th batch 66-85 students	4th batch 51-65 students
5th batch 86-100 students	5th batch 66-80 students
	6th batch 81-100 students

Note:-If the number of students in a division is in excess of 100 students, the 6th batch be opened only after admitting 20 students in the 5th batch.

Note:-If the number of students in a division is in excess of 100 students, the 6th batch will consist of 15 students only.

Notwithstanding what is stated in both the above notes, in case the additional batch consists of not more than 5 students, these students be accommodated in the earlier batch i.e. the last batch strength will be not more than 25 students in the subjects other than the subjects of

Navneet College Art, Science & Commerce						
Tutorial Lecture Academic Year 2022-23						
Business Communication Semester -I						
Time Table						
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.10-10.00am	-	-	-	-	FYBCOM BATCH-II	FYBCOM BATCH-III
8.50- 9.40am	-	FYBMS BATCH-I	FYBMS BATCH-I	-	-	-
11.40-12.30pm	-	FYBAF BATCH-I	FYBAF BATCH-I	-	-	-

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 Mumbai Central, Mumbai - 400 008



Navneet College of Art, Science & Commerce
Syllabus of Tutorial Lecture-2022-23
Business Communication Semester-I

Unit 1: Theory of Communication

I. Concept of Communication.

1. Meaning, Definition, Process of communication.
2. Need Feedback Emergence of Communication.
3. Corporate and Global world Impact of technological advancements on Communication.

II. Channels and Objectives of Communication

1. Channels-- Formal and Informal—Vertical, Horizontal, Diagonal, Grapevine
2. Objectives of Communication –
 - Information, Advice.
 - Order and Instruction.
 - Persuasion, Motivation,
 - Education, Warning, and
 - Boosting the Morale of Employees

III. Methods and Modes of Communication

1. Verbal, Characteristics of Verbal Communication
2. Nonverbal Characteristics of Non-verbal Communication .
 - Landline, Wireless
 - Cellular Phones Facsimile Communication [Fax]
 - Computers and E- communication
 - Video and Satellite Conferencing

iv. Barriers to Communication

1. Physical Barriers
2. Semantic / language Barriers
3. Socio-Cultural Barriers
4. Psychological Barriers

v. Listening Skill

1. Importance of Listening Skills
2. Cultivating good Listening Skills

Unit 2: Business Correspondence

I. Theory of Business Letter Writing

- Parts, Structure, Layouts full Block, Modified Block, Semi Block
- Principles of Effective Letter Writing

ii. Personnel Correspondence

- Statement of Purpose
- Job Application Letter and Resume
- Letter of Acceptance of Job Offer,
- Letter of Resignation
- [Letter of Appointment, Promotion and Termination, Letter of Recommendation]

Unit 3: Language and Writing Skills

I. Paragraph Writing

- Developing an idea, using appropriate linking devices, etc
- Cohesion and Coherence, self-editing, etc.
- Interpretation of technical data.
- Composition on a given situation, a short informal report etc.

II. Commercial Terms used in Business Communication



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Navneet College of Art, Science & Commerce
Tutorial Lecture Academic Year 2022-23
Business Communication Semester -I
Attendance Sheet

FYBCOM

Sr.no.	Name of the student	Sign.
1	CHAWAN PRANAV YOGESH	Pranav
2	ANSARI MARYAM MOHD	Maryam
3	AWADE MANGESH SIDDHARTH	Mangesh
4	FURIA SIDDH HITESH	Furia
5	KAMBLE MANSVI SANTOSH	Mansvi
6	MER RAKESH SHANITILAL	Rakesh
7	BANDABE AKHIL DASHARATH	Akhil
8	QURESHI FARHAN LIYAKAT	Farhan
9	SHAIKH MAAZ KISMATALI	Maaz
10	BARUA VISHAKA ADESH	Vishaka
11	SHEDEKAR SURAJ DATTARAM	Suraj
12	KHAN IQRA VASIULLAH	Iqra
13	THAWARE SNEHA SANTOSH	Sneha
14	YADAV PAVAN KAILASH	Pavan
15	MADRE SAFA KAMAL	Safa
16	ADWANI BILAL SALIM	Bilal
17	TURK ANAS USMAN	Anas
18	SATHE JANHAVI DILIP	Janhavi
19	KHAN ANAS MASHOOR ZARINA	Anas
20	MAHESH PRATHAM	Mahesh
21	GUPTA ANKIT AJAY	Ankit
22	TIWARI SUMIT SATISH	Sumit
23	VINJUDA PRAVIN MANGALJI	Pravin
24	SINGH AYUSH RAJESH	Ayush
25	GUPTA VISHAL RAJESH	Vishal

Name of the faculty
Suman Yachan



Sign. Of faculty
Suman Yachan

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Tutorial Lecture Academic Year 2022-23
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4	FURIA SIDDH HITESH	<i>Furia</i>
5	KAMBLE MANSVI SANTOSH	<i>Mansvi</i>
6	MER RAKESH SHANITILAL	<i>Rakesh</i>
7	BANDABE AKHIL DASHARATH	<i>Akhil</i>
8	QURESHI FARHAN LIYAKAT	<i>Farhan</i>
9	SHAIKH MAAZ KISMATALI	<i>Maaz</i>
10	BARUA VISHAKA ADESH	<i>Vishaka</i>
11	SHEDEKAR SURAJ DATTARAM	<i>Suraj</i>
12	KHAN IQRA VASIULLAH	<i>Iqra</i>
13	THAWARE SNEHA SANTOSH	<i>Sneha</i>
14	YADAV PAVAN KAILASH	<i>Pavan</i>
15	MADRE SAFA KAMAL	<i>Safa</i>
16	ADWANI BILAL SALIM	<i>Bilal</i>
17	TURK ANAS USMAN	<i>Anas</i>
18	SATHE JANHAVI DILIP	<i>Janhavi</i>
19	KHAN ANAS MASHOOR ZARINA	<i>Anas</i>
20	MAHESH PRATHAM	<i>Mahesh</i>
21	GUPTA ANKIT AJAY	<i>Ankit</i>
22	TIWARI SUMIT SATISH	<i>Sumit</i>
23	VINJUDA PRAVIN MANGALJI	<i>Pravin</i>
24	SINGH AYUSH RAJESH	<i>Ayush</i>
25	GUPTA VISHAL RAJESH	<i>Vishal</i>

Name of the faculty

Sumun-1udbv



Sign. Of faculty

Sumun-1udbv

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Tutorial Lecture Academic Year 2022-23
Business Communication Semester -I
Attendance Sheet

FYBAF

Sr.no.	Name of the student	Sign.
1	JAISWAL KAJAL SHAILENDRA	Kajal
2	KAMBLE SAHIL NITIN	Sahil
3	KANDI VIGHNESH RAKESH	Kandi
4	MAHADIK VEDANT VIJAY	Vedant
5	PAL DEEPAK RAJESH	Deepak
6	PALVE VANITA RAKHAMAJI	Vanita
7	RATHOD MEGHA HITESH	Megha
8	SAHU NIKHIL RAJPRATAP	Nikhil
9	SHAIKH SHAHAB PARVEZ	Shahab
10	SHINDE SAIRAJ AJIT	Sairaj
11	SHIRAZI SAKINA MAHMOOD	Sakina
12	TALAYE RUTUJA GHANASHYAM	Rutuja
13	VANI ATHARVA ASHOK	Ashok
14	ASHOK PRAJAKTA	Prajakta
15	PRASAD SHIVAM NAVALRAJ	Shivam
16	SHAIKH ZEESHAN NASIM	Zeeshan
17	SHAIKH MOHAMMED AMAAN NAZREALAM	Amaan
18	KHAN MOHAMMED HAMMAD ABDULLA	Mohammed
19	BANSODE SAHIL SANJAY	Sahil
20	BHERI MOHAMMED ANIS	Anis
21	BAIG MEHARUNISSA HABIB	Baig
22	JHA ANJALI MURARI	Anjali
23	KATTE PRATIK KIRAN	Pratik
24	KUNCHIKORVE VISHNU PARSHURAM	Vishnu
25	KUNWAR JAYANDRA JHANKAR	Jayandra

Name of the faculty
Suman Jadhav



Sign. Of faculty
Suman Jadhav

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7	RATHOD MEGHA HITESH	Megha
8	SAHU NIKHIL RAJPRATAP	Nikhil
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10	SHINDE SAIRAJ AJIT	Sairaj
11	SHIRAZI SAKINA MAHMOOD	Sakina
12	TALAYE RUTUJA GHANASHYAM	Rutuja
13	VANI ATHARVA ASHOK	Ashok
14	ASHOK PRAJAKTA	Prajakta
15	PRASAD SHIVAM NAVALRAJ	Shivam
16	SHAIKH ZEESHAN NASIM	Zeeshan
17	SHAIKH MOHAMMED AMAAN NAZREALAM	Amaan
18	KHAN MOHAMMED HAMMAD ABDULLA	Mohammed
19	BANSODE SAHIL SANJAY	Sahil
20	BHERI MOHAMMED ANIS	Anis
21	BAIG MEHARUNISSA HABIB	Baig
22	JHA ANJALI MURARI	Anjali
23	KATTE PRATIK KIRAN	Pratik
24	KUNCHIKORVE VISHNU PARSHURAM	Vishnu
25	KUNWAR JAYANDRA JHANKAR	Jayandra

Name of the faculty

Suman Jadhav



Sign. Of faculty

Suman Jadhav

Principal

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Tutorial Lecture Academic Year 2022-23
Business Communication Semester -I
Attendance Sheet

FYBMS

Sr.no.	Name of the student	Sign.
1	ANSARI MUSTAFA USMANGANI	A
2	DUBEY SHIVAM ASHOK	Dubey
3	FARASH MAHEK FARID	FARID
4	GIRI SUNNY RAKESH	Giri
5	JAIN JEEMIT KANHAIYALAL	Jain
6	JOSHI SHREYASH SUNIL	Sunil
7	KAMTEKAR ALPITA RAVINDRA	Alpita
8	KHAN KULSUM ZIAUDDIN	Kulsum
9	MARU MAHEK BIPIN	Maru
10	MORE ROHIT AKARAM	Rohit
11	PANDEY SAURABH RAMSAMUGH	Saurabh
12	SALIMSAYYED GOSH SALIM	S. Ramdagh.
13	SAYED ARIF AZIZ	Aziz
14	SHAH JUNED NAZIBULLA	Juned
15	SHAIKH AZALEA HANNAN ANSAR	A.H.A.
16	SHAIKH MOHAMMED MAAZ SALLAUDDIN	Maaaz
17	SHAIKH SUHAIB SHAKIRALI	Suhaib
18	SHAIKH AAMIR MUKHTARAHMED	Aamir
19	SINGH SHIVAM DEVENDRA	Shivan.
20	SURYAVANSHI HARSHADA ASHOK	Harshada
21	WAGHAMARE SANIKA SARJERAO	Sanika
22	YADAV SHUBHAM BALGOVIND	Shubham
23	YADAV AMIT CHANDRABHAN	Amit
24	YADAV KARAN JITA	K.J
25	SALUNKHE ANAND VITHAL	AV.

Name of the faculty

Suman Tuckey



Sign. Of faculty

Suman Tuckey

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 Tutorial Lecture Academic Year 2022-23
 Business Communication Semester -I
 Attendance Sheet

FYBMS

Sr.no.	Name of the student	Sign.
1	ANSARI MUSTAFA USMANGANI	<i>M.Usman</i>
2	DUBEY SHIVAM ASHOK	<i>Shivam</i>
3	FARASH MAHEK FARID	<i>FARID</i>
4	GIRI SUNNY RAKESH	<i>Sunny</i>
5	JAIN JEEMIT KANHAIYALAL	<i>Jeem</i>
6	JOSHI SHREYASH SUNIL	<i>Sunil</i>
7	KAMTEKAR ALPITA RAVINDRA	<i>ALPITA</i>
8	KHAN KULSUM ZIAUDDIN	<i>Kulsum</i>
9	MARU MAHEK BIPIN	<i>Bipin</i>
10	MORE ROHIT AKARAM	<i>Rohit</i>
11	PANDEY SAURABH RAMSAMUGH	<i>S. Ramsamugh</i>
12	SALIMSAYYED GOSH SALIM	<i>Gosh</i>
13	SAYED ARIF AZIZ	<i>Arif</i>
14	SHAH JUNED NAZIBULLA	<i>Juned</i>
15	SHAIKH AZALEA HANNAN ANSAR	<i>A.H.A</i>
16	SHAIKH MOHAMMED MAAZ SALLAUDDIN	<i>M. Maaz</i>
17	SHAIKH SUHAIB SHAKIRALI	<i>Suhaib</i>
18	SHAIKH AAMIR MUKHTARAHMED	<i>Aamir</i>
19	SINGH SHIVAM DEVENDRA	<i>Shivam</i>
20	SURYAVANSHI HARSHADA ASHOK	<i>Harshada</i>
21	WAGHAMARE SANIKA SARJERAO	<i>Sanika</i>
22	YADAV SHUBHAM BALGOVIND	<i>Shubham</i>
23	YADAV AMIT CHANDRABHAN	<i>Amit</i>
24	YADAV KARAN JITA	<i>K.J</i>
25	SALUNKHE ANAND VITHAL	<i>A.V.</i>

Name of the faculty
Suman Yadav



Sign. Of faculty
Suman Yadav

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Navneet College of Art, Science & Commerce						
Tutorial Lecture Academic Year 2022-23						
Business Communication Semester -II						
Time Table						
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.50-9.40am	FYBCOM BATCH-I	FYBCOM BATCH-II	-	-	-	-
11.40-12.3pm	FYBMS BATCH-I	FYBMS BATCH-I	-	-	-	-
11.40-12.30pm	-	-	-	-	FYBAF BATCH-I	FYBAF BATCH-I



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Navneet College of Art, Science & Commerce
Syllabus of Tutorial Lecture -2022-23
Business Communication Semester-II

I. Presentation Skills

1. Presentations:
 - 4 Principles of Effective Presentation
 - Effective use of OHP
 - How to make a Power-Point Presentation

II. Group Communication Interviews:

1. Group Communication & Interviews:
 - Group Discussion Preparing for an Interview
 - Types of Interviews – Selection, Appraisal, Grievance, Exit
2. Meetings:
 - Need and Importance of Meetings,
 - Types of Meeting
 - Drafting of Notice, Agenda and Resolutions
3. Conference:
 - Meaning and Importance of Conference
 - Organizing a Conference
 - Modern Methods: Video and Tele – Conferencing
4. Public Relations:
 - Meaning, Functions of PR Department
 - External and Internal Measures of PR

III Business Correspondence Trade Letters:

1. Trade Letters:
 - Order, Credit and Status Enquiry, Collection
 - Letters of Inquiry & Letters of Complaints
 - Claims & Adjustments
2. Sales Letters
 - promotional leaflets and fliers
 - Consumer Grievance Letters,
 - Letters under Right to Information (RTI) Act

IV. Language and Writing Skills Reports:

- Parts, Types, Feasibility Reports, Investigative Reports
- Summarization:
- Identification of main and supporting/sub points presenting these in a cohesive manner



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Navneet College of Art, Science & Commerce
Tutorial Lecture Academic Year 2022-23
Business Communication Semester -II
Attendance Sheet

FYBCOM

Sr.no.	Name of the student	Sign.
1	SINGH AYUSH RAJESH	<i>Ayush</i>
2	SOLANKI GANESH BHARAT	<i>GANESH</i>
3	SOLANKI JITU RAMESH	<i>JITU</i>
4	TAMORE PRANITA PURUSHOTTAM	<i>P</i>
5	TAYADE SURAJ MAHENDRA	<i>Suraj</i>
6	THAWARE SNEHA SANTOSH	<i>Sneha</i>
7	TIWARI SURAJ ARVIND	<i>Suraj</i>
8	VINJUDA PRAVIN MANGALJI	<i>Pravin</i>
9	VINJUDA KANTA MANGALJI	<i>Ka</i>
10	VISHWAKARMA SHIVAM RAMJI	<i>Shivam</i>
11	WAGHELA VISHAL KISHOR	<i>VIS</i>
12	YADAV SIDDHIKESH SUCHIT	<i>Sid</i>
13	YADAV PAVAN KAILASH	<i>Pavan</i>
14	YADAV KUMAR SURYAKANT	<i>Yadav</i>
15	YADAV AWDHESH RAMBRIKSH	<i>Ah</i>
16	YERAM NAMRATA HEMANT	<i>AA</i>
17	MADRE SAFA KAMAL	<i>Safa</i>
18	VICHARE SHUBHAM ANIL	<i>Shubham</i>
19	GUPTA NIHIL RAKESH	<i>Nihil</i>
20	SOLANKI KASHISH VINOD	<i>KA</i>
21	TIWARI SUMIT SATISH	<i>Sumit</i>
22	PEDNEKAR AKANKSHA JAYDAS	<i>Akanksha</i>
23	CHOUHAN PRANJAL MANGESH	<i>Pranjal</i>
24	GUPTA ANKIT AJAY	<i>Ankit</i>
25	KOHLI ANCHAL KAMALKOHLI	<i>An</i>

Name of the faculty

Suman-ludhv



Suman-ludhv

Sign. Of faculty

Suman-ludhv

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Navneet College of Art, Science & Commerce
Tutorial Lecture Academic Year 2022-23
Business Communication Semester -I I
Attendance Sheet

FYBCOM

Sr.no.	Name of the student	Sign.
1	SINGH AYUSH RAJESH	Ayush
2	SOLANKI GANESH BHARAT	GANESH
3	SOLANKI JITU RAMESH	JITU
4	TAMORE PRANITA PURUSHOTTAM	P
5	TAYADE SURAJ MAHENDRA	Suraj
6	THAWARE SNEHA SANTOSH	Sneha
7	TIWARI SURAJ ARVIND	Suraj
8	VINJUDA PRAVIN MANGALJI	Vinjuda
9	VINJUDA KANTA MANGALJI	Kanta
10	VISHWAKARMA SHIVAM RAMJI	Shivam
11	WAGHELA VISHAL KISHOR	Vishal
12	YADAV SIDDHIKESH SUCHIT	Siddhi
13	YADAV PAVAN KAILASH	Pavan
14	YADAV KUMAR SURYAKANT	Suryakant
15	YADAV AWDHESH RAMBRIKSH	Awdhesh
16	YERAM NAMRATA HEMANT	Namrata
17	MADRE SAFA KAMAL	Safa
18	VICHARE SHUBHAM ANIL	Shubham
19	GUPTA NIHIL RAKESH	Nihil
20	SOLANKI KASHISH VINOD	Kashish
21	TIWARI SUMIT SATISH	Sumit
22	PEDNEKAR AKANKSHA JAYDAS	Akansha
23	CHOUHAN PRANJAL MANGESH	Pranjali
24	GUPTA ANKIT AJAY	Ankit
25	KOHLI ANCHAL KAMALKOHLI	Anchal

Name of the faculty

Suman Yadav



Sign. Of faculty

Bhaskar

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Navneet College of Commerce & Science
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Navneet College of Art, Science & Commerce
Tutorial Lecture Academic Year 2022-23
Business Communication Semester -II
Attendance Sheet

FYBMS

Sr.no.	Name of the student	Sign.
1	SHAIKH MOHAMMED MAAZ SALLAUDDIN	<i>maaz</i>
2	SHAIKH SUHAIB SHAKIRALI	<i>Suhaib</i>
3	SHAIKH AAMIR MUKHTARAHMED	<i>aamir</i>
4	SINGH SHIVAM DEVENDRA	<i>Shivam</i>
5	SURYAVANSHI HARSHADA ASHOK	<i>Harshada</i>
6	WAGHAMARE SANIKA SARJERAO	<i>Sanika</i>
7	YADAV SHUBHAM BALGOVIND	<i>Shubham</i>
8	YADAV AMIT CHANDRABHAN	<i>amit</i>
9	YADAV KARAN JITA	<i>Karan</i>
10	SALUNKHE ANAND VITHAL	<i>Anand</i>
11	PATEL GAURAV BHAVESH	<i>Gaurav</i>
12	BISHT VERENDRASINGH SHYAM	<i>V. Shyam</i>
13	CHOUDHARY ZAKWAN ABDULRAUF	<i>Zakwan</i>
14	GRACIAS JOHNSON JOSEPH	<i>J. J.</i>
15	SHAIKH SAHIL HABIB	<i>Sahil</i>
16	SANAS ARYAN VISHAL	<i>Aryan</i>
17	SAKPAL ROHIT CHANDRAKANT	<i>Rohit</i>
18	SINGH MAANYA SANJEEV	<i>Maanya</i>
19	SHAIKH AALAMGEER MOHAMMADVALZAHIR	<i>Ala</i>
20	PAL JYOTI GAUTAM	<i>Jyoti</i>
21	BUDDHA MOHAMMED WAJAHAD SHAIKATALI	<i>Wajahad</i>
22	KHAN MOHD HAMMAD MOHAMMEDJAVID	<i>Hammad</i>
23	KAJAL KUMARI AJAY	<i>Kumari</i>
24	BALKESHWAR DARSHAN	<i>Darshan</i>
25	GAJERA AASTHA	<i>Aastha</i>

Name of the faculty
Suman Tude



Sign. Of faculty
Suman Tude

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3	SHAIKH AAMIR MUKHTARAHMED	Aamir
4	SINGH SHIVAM DEVENDRA	Shivam
5	SURYAVANSHI HARSHADA ASHOK	Harshada
6	WAGHAMARE SANIKA SARJERAO	Sanika
7	YADAV SHUBHAM BALGOVIND	Shubham
8	YADAV AMIT CHANDRABHAN	Amit
9	YADAV KARAN JITA	Karan
10	SALUNKHE ANAND VITHAL	Anand
11	PATEL GAURAV BHAVESH	Gaurav
12	BISHT VERENDRASINGH SHYAM	V. Shyam
13	CHOUDHARY ZAKWAN ABDULRAUF	Zakwan
14	GRACIAS JOHNSON JOSEPH	J. J.
15	SHAIKH SAHIL HABIB	Sahil
16	SANAS ARYAN VISHAL	Aryan
17	SAKPAL ROHIT CHANDRAKANT	Rohit
18	SINGH MAANYA SANJEEV	Maanya
19	SHAIKH AALAMGEER MOHAMMADVALZAHIR	Aala
20	PAL JYOTI GAUTAM	Jyoti
21	BUDDHA MOHAMMED WAJAHAD SHAUKATALI	Wajahad
22	KHAN MOHD HAMMAD MOHAMMEDJAVID	Mohammed
23	KAJAL KUMARI AJAY	Kajal
24	BALKESHWAR DARSHAN	Darshan
25	GAJERA AASTHA	Aastha

Name of the faculty

Suman Yachan



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Suman Yachan

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Navneet College of Art, Science & Commerce
Tutorial Lecture Academic Year 2022-23
Business Communication Semester -II
Attendance Sheet

FYBAF

Sr.no.	Name of the student	Sign.
1	KAMBLE SAHIL NITIN	Nitin
2	KANDI VIGNESH RAKESH	Kandi
3	MAHADIK VEDANT VIJAY	Vedant
4	PAL DEEPAK RAJESH	Deepak
5	PALVE VANITA RAKHAMAJI	Vanita
6	RATHOD MEGHA HITESH	Megha
7	SAHU NIKHIL RAJPRATAP	N.K.
8	SHAIKH SHAHAB PARVEZ	Shahab
9	SHINDE SAIRAJ AJIT	Sairaj
10	SHIRAZI SAKINA MAHMOOD	Sakina
11	TALAYE RUTUJA GHANASHYAM	Rutuja
12	VANI ATHARVA ASHOK	Ashok
13	ASHOK PRAJAKTA	Prajakta
14	PRASAD SHIVAM NAVALRAJ	Shivam
15	SHAIKH ZEESHAN NASIM	Zeeshan
16	SHAIKH MOHAMMED AMAAN NAZREALAM	Amaan
17	KHAN MOHAMMED HAMMAD ABDULLA	HAMMAD
18	BANSODE SAHIL SANJAY	Sahil
19	BHERI MOHAMMED ANIS	M.A.
20	KAMBLE SAHIL NITIN	Sahil
21	KANDI VIGNESH RAKESH	Kandi
22	MAHADIK VEDANT VIJAY	Vedant
23	PAL DEEPAK RAJESH	Deepak
24	PALVE VANITA RAKHAMAJI	Vanita
25	RATHOD MEGHA HITESH	Megha

Name of the faculty
Suman Jadhav



Sign. Of faculty

Suman Jadhav

(Handwritten signature in purple ink)

PRINCIPAL
 Navneet College of Commerce & Science
 Mumbai Central, Mumbai - 400 008

Navneet College of Art, Science & Commerce
 Tutorial Lecture Academic Year 2022-23
 Business Communication Semester -II
 Attendance Sheet

FYBAF

Sr.no.	Name of the student	Sign.
1	KAMBLE SAHIL NITIN	<i>Sahil</i>
2	KANDI VIGNESH RAKESH	<i>Vignesh</i>
3	MAHADIK VEDANT VIJAY	<i>Vedant</i>
4	PAL DEEPAK RAJESH	<i>Deepak</i>
5	PALVE VANITA RAKHAMAJI	<i>Vanita</i>
6	RATHOD MEGHA HITESH	<i>Megha</i>
7	SAHU NIKHIL RAJPRATAP	<i>N.R.</i>
8	SHAIKH SHAHAB PARVEZ	<i>Shahab</i>
9	SHINDE SAIRAJ AJIT	<i>Sairaj</i>
10	SHIRAZI SAKINA MAHMOOD	<i>Sakina</i>
11	TALAYE RUTUJA GHANASHYAM	<i>Rutuja</i>
12	VANI ATHARVA ASHOK	<i>Ashok</i>
13	ASHOK PRAJAKTA	<i>Prajakta</i>
14	PRASAD SHIVAM NAVALRAJ	<i>Shivam</i>
15	SHAIKH ZEESHAN NASIM	<i>Zeeshan</i>
16	SHAIKH MOHAMMED AMAAN NAZREALAM	<i>Amaan</i>
17	KHAN MOHAMMED HAMMAD ABDULLA	<i>Hammad</i>
18	BANSODE SAHIL SANJAY	<i>Sahil</i>
19	BHERI MOHAMMED ANIS	<i>M. Anis</i>
20	KAMBLE SAHIL NITIN	<i>Sahil</i>
21	KANDI VIGNESH RAKESH	<i>Vignesh</i>
22	MAHADIK VEDANT VIJAY	<i>Vedant</i>
23	PAL DEEPAK RAJESH	<i>Deepak</i>
24	PALVE VANITA RAKHAMAJI	<i>Vanita</i>
25	RATHOD MEGHA HITESH	<i>Megha</i>

Name of the faculty
Suman Tudekar



Sign. Of faculty
Suman Tudekar

[Handwritten Signature]

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NAVNEET COLLEGE OF COMMERCE & SCIENCE

TUTORIAL LECTURE 2022-23

MATHEMATICAL & STATISTICAL TECHNIQUES-1(FYBCOM)
&
Business Mathematics (FYBMS)

TIME TABLE

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10.40 am to 11.40 am	FYBCOM	FYBCOM	-----	-----	-----	-----
11.40am to 12.30 am	-----	FYBCOM	-----	FYBMS	FYBMS	-----



A handwritten signature in blue ink, appearing to be "A. H.", is written over a horizontal line.

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NAVNEET COLLEGE OF COMMERCE & SCIENCE

SYLLABUS OF TUTORIAL LECTURE 2022-23

FYBCOM- MATHEMATICAL & STATISTICAL TECHNIQUES-1

Unit I: Shares and Mutual Funds

1. From 4 professors and 6 students, a committee of 4 is to be formed. In how many ways the committee can be formed such that it contains only one professor?

2. How many numbers of 5 digits can be formed using the digits 1, 2, 3, 4, 5, 6 such that

(i) No digit is repeated

(ii) Repetition of digits is allowed

4. How many ways out of 11 members of a cricket team choose a Captain, Vice-captain and wicket-keeper from among themselves?

5. Solve the linear programming problem graphically.

Minimize $10x + 7y$

Subject to, $2x + y \geq 2$,

$$x + 3y \geq 3,$$

$$x, y \geq 0.$$

6. A cracker manufacturer produces two types of cracker, rockets and bombs packed in boxes of hundreds in its two factories. Factory I performs the basic assembly operation. Factory II performs the Basic assembly operation. For financial reason, Factory I has only 180 hours available per week and factory II has 120 hours available. Factory I need 3 hours on each box of rockets and 10 hours on each box of bombs. Factory II needs 6 hours on box of rockets and 4 hours on box of bombs.

The profit of the company is ₹ 45 per box of rockets and ₹ 55 per box of bombs.

Formulate the LPP to maximize the profit.

Chp-2 Permutation, Combination and Linear Programming Problems:

1. If the market price of the with the face value ₹100 is ₹ 130, how many shares of the company can be bought for ₹ 3,263, brokerage being 0.4%.



2. Smooth Writing Industry issued some share of face value ₹ 10 each. A dividend of ₹ 7,500 was declared by the company at 2.5% per share. Find number of shares issued by the company.

3. Neil purchased 1,200 units of a mutual fund by investing ₹ 60,000. If the entry load was 2%, find NAV on the date of purchase.

4. Nihar invested ₹ 40,000 in mutual funds on 14-2-2012 when NAV was ₹ 13.65, a dividend of ₹ 3 per unit was given on 20-4-2012. Afterwards he sold all the units on 20-8-2012 when NAV was ₹ 16.85. Find his gain if there is no entry and exit load.

5. An investor joined the SIP scheme for a mutual fund under which he would invest ₹ 15,000 for 5 months. If the NAVs for each months are ₹ 46.2, ₹ 45, ₹ 47, ₹ 47.5 and ₹ 60., find the average cost using rupee cost averaging method, the entry load being 2.5% throughout for these months.

Chp-3 Functions, Derivatives and Their Applications

1. Find the median and the fifth decile for the following frequency distribution.

Class Interval	5-10	15-20	25-30	35-40
Frequency	16	14	13	17

2. Write merits and demerits of mean and mode.

3. Draw a histogram and hence locate the mode graphically for the following distribution of marks.

Marks	20-30	30-40	40-50	50-60
No. of Students	11	15	24	14

4) From the following frequency distribution, calculate the standard deviation.

X	5	6	7	8	10
Frequency	3	7	4	2	4

5. For the following data, find the combined mean. Also find which group has more variation.

	Group I	Group II
Number of Articles	70	90
Mean	75	82
Variance	16	49

Chp-4 Interest and Annuity:

1. Define the following terms with examples:

(i) Complementary (ii) Sample Space



2. Two unbiased dice are thrown. Find the probability that

(i) Number on first die is less than number on second die .

(ii) Sum of number on the two die is 8.

3. If $P(A) = 1/2$, $P(B) = 1/3$, $P(A \cup B) = 1/6$. Find $P(A')$ and $P(A \cap B)$.

4. The following table shows a Probability Distribution of a Random Variable X.

X	-1	0	1	2	3
P(X)	0.1	0.25	0.25	0.2	0.2

Find (i) $P(X > 1)$ (ii) $E(X)$ (iii) $V(X)$

5. Four cards are to be selected from a pack of well shuffled 52 playing cards.

Find the probability that

(i) All are black.

(ii) Only one is king.

Chp- 5 Bivariate Linear Correlation and Regression

1. For the following pay off table, suggest the best decision by using.

(i) Maxima criterion (ii) Maximin criterion (iii) Laplace criterion

Course of Action	State of Nature			
	S1	S2	S3	S4
A1	57	24	37	50
A2	24	28	32	13
A3	12	31	26	44

2. Draw a decision tree for the following decision making problem and suggest the best decision.

No. of units demanded	10	11	12
Probability	0.35	0.4	0.25

The product is sold at ₹ 100 per unit with cost price ₹ 70 per unit. Prepare a payoff table and decide the best decision. The unit not sold is wasted.

5. For the following pay-off table, suggest the best decision by EOL method.

Course of Action	State of Nature		
	S1	S2	S3
A1	14	16	10
A2	12	15	16
A3	20	18	14
Probability	0.4	0.3	0.3



NAVNEET COLLEGE OF COMMERCE & SCIENCE

SYLLABUS OF TUTORIAL LECTURE 2022-23

FYBMS- Business Mathematics

Chp-1 Elementary Financial Mathematic

1. Find the maturity amount of a 2 years fixed deposit of Rs 1,00,000 at 10% p.a. if the interest is compounded semi-annually.
(ii) Given: $f(x) = x - 2$ for $1 < x \leq 2$
 $= 2x - 1$ for $2 < x < 4$
 $= 25$ for $4 \leq x \leq 5$
Find $f(2)$, $f(4)$ and $f(5)$. Also find x when $f(x) = 5$
2. A loan of ₹ 80,000 is to be returned in 3 equal monthly installments at the rate of 12% p.a. compounded monthly. Find the EMI using reducing balance method. Find the interest and principal repayment for each month.

Chp-2 Matrices and Determinants

1. In how many ways can the letters of the word "DONKEY" be arranged, if the Vowels are never together.
(ii) In how many ways can the letters of the word "STUPID" be arranged if the arrangements start and ends with vowels.
2. A watch company is to produce a cheaper variety Of wrist watches. It involves initially a fixed cost of ₹ 2 lakhs and a variable cost of ₹105 for each wrist watch. If each wrist watch can be sold at ₹500, find the total cost function, the total revenue function and the profit function. How many wrist watches must be produced and sold so that the company does not incur any loss.

Chp-3 Derivates and Application of Derivations

1. if $A = \begin{bmatrix} 2 & -1 & 1 & 3 \end{bmatrix}$, find the matrix, $A^2 + 3A - 5I$
(ii) $A = \begin{bmatrix} 2 & -2 & -4 & -1 & 3 & 4 & 1 & -2 & -3 \end{bmatrix}$ show $A^2 = A$.
2. Solve the following equation using Crame's Rule.
 $3x + 3y - z = 11$



$$2x - y + 2z = 9$$

$$4x + 3y + 2z = 25$$

3. The input-output matrix for two industry case is given below.

Industry	Consumption by Industry		Final Demand	Total Output
	1	2		
1	100	200	100	400
2	200	300	200	700
Input	100	200		

Find total Outputs if demands are $\begin{bmatrix} 300 \\ 500 \end{bmatrix}$ and labour requirement for this output. Also find the total input requirement.

4. Solve the equations using Matrix Inversion Method.

$$3x + 2y + 4z = 2, \quad x - 2y - z = 6, \quad x + 2y - 6z = -2$$

5. (A) Find dy/dx if,

(i) $y = (x + 2)^2 \log x$

(ii) $y = (x^2 - 3x + 5)/e^x + 1$

(B) Find maxima and minima for the function. $f(x) = x^3 - 2x^2 + x + 10$

Chp-4 Numerical Analysis

1. The demand for a commodity when its price is x is given by $y = \frac{2x+5}{3x-4}$

Find the elasticity of demand when the price is 5 units.

2. By preparing the forward difference table find the 6th and 7th terms of the sequence. (i) 6, 11, 18, 27, 38

(ii) 8, 3, 0, -1, 0

3. (A) A machine is bought at ₹ 80,000 has effective life of 4 years. A sinking fund is created for replacing the machine by a new model at the end of its lifetime, when its scrap value is ₹ 5,000. The price of the new model is estimated to be 25% higher than the present price, Find out what amount should be set aside at the end of each year out of the profits for the sinking fund if it accumulates at 5% per annum compounded annually.



4. A factory produces 3 goods P, Q and R. A unit of P requires 2 hours on machine I, 3 hours on machine II and 1 hour on machine III the same figures for Q are 1, 2 and 4 and for R are 2, 1 and 2 a day. Find out how many unit of P, Q and R can be produced if the machine time is fully utilised.



A handwritten signature in purple ink, consisting of stylized cursive letters.

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Navneet Education Society's

NAVNEET COLLEGE **OF COMMERCE & SCIENCE**

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Reports of Field Visits Organised by the College



Navneet Education Society's

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Industrial Visits

Place of Visit	No. of Participants
A.Y. 2018-2019	
Industrial Belts in Chandigarh –Amritsar, Shimla and Malani	25
A.Y. 2019-2020	
Nehru Planetarium and Nehur Science Centre, Mumbai	75
Centre for Excellence in Telecom Technology and Management (CETTM), Powai, Mumbai	33
A.Y. 2020-2021	
Nil	Nil
A.Y. 2021-2022	
Centre for Excellence in Telecom Technology and Management (CETTM), Powai, Mumbai	26
A.Y. 2022-2023	
Centre for Excellence in Telecom Technology and Management (CETTM), Powai, Mumbai	54
RBI Monetary Museum, Mumbai	25
Navneet Publication Pvt. Ltd., Virar, Thane	42

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A.Y. 2018-19

Report on Industrial Visit to Chandigarh – Amritsar, Shimla and Manali

Date: 10th December, 2018 to 20th December, 2018

No. of Students: 40

No. of Staff Members: 5



Navneet College of Commerce and Science organized an insightful Industrial Visit between 10th December, 2018 to 20th December 2018 providing a unique opportunity for students to gain practical insights into the operations of various industries.

The journey commenced on 10th December 2018, as eager students gathered at Mumbai Central Terminus to embark on this educational excursion. A diverse group of 40 students representing different courses, including B. Sc – Information Technology, B. Com, and BMS, actively participated in this 10-day Industrial Visit.

Throughout the visit, students had the chance to explore and interact with professionals in their respective fields, enhancing their understanding of industry practices. The diverse backgrounds of the participating students added a multidimensional perspective to the experience. The 10-day duration allowed for in-depth interactions, hands-on experiences, and exposure to the day-to-day operations of the industries visited.

Outcomes:

The Industrial Visit not only broadened the students' perspectives, but also fostered a sense of enthusiasm and curiosity about their chosen fields of study. The College looks forward to organizing more such experiential learning opportunities to enrich the educational journey of its students.

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A.Y. 2019-20

Report on Visit to Nehru Planetarium and Nehru Science Centre, Mumbai

Date: 19th November, 2019

No. of Students: 75

No. of Staff Members: 6



Navneet College organized a One-Day Field Visit to the "Nehru Science Center" to familiarize students with foundational Science and Technology principles. Commencing at 10 AM, the visit aimed to provide a practical understanding of various scientific concepts.

The reception hall showcased exhibits on Energy transfer, Electric Potential, Vortices, and Electromagnetism. Physics exploration included the Hall of Light and Hall of Sound, covering wave propagation, the Doppler effect, sound travel, musical experiments, frequency, resonance, hyperboloid, electric potential, and advancements in fiber optics, speakers, and 3D imaging. Following lunch at 1 PM, students delved into Biology exploration in the Hall of Human and Machine. Key learnings encompassed the nervous system, digestive system, heart specimens, reflex actions, organ replacement, a giant heart display, eye and vision, respiratory system, a DNA quiz, and an excretory system activity. Insights into stem cell research concluded the visit.

Outcomes:

This One-Day Field Visit provided a valuable opportunity for students to witness and comprehend scientific principles in a practical and engaging manner.

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A.Y. 2019-20, 2021-22 and 2022-23

Report of Visit to the Centre for Excellence in Telecom Technology and Management (CETTM), Powai, Mumbai

Navneet Education Society organized a one-day industrial visit to the Center for Excellence in Telecom Technology and Management (CETTM), Powai, Mumbai, on three occasions: 25th September 2019, 25th February 2022, and 12th September 2022. The purpose was to provide students with practical insights into the telecommunications industry.

Details of Visits:

Dates: 25th September 2019, 25th February 2022, and 12th September 2022

Number of Students: 33 (2019-20), 26 (2021-22), and 54 (2022-23)

Number of Staff Members: 3 (2019-20), 3 (2021-22), and 4 (2022-23)

Objective and Preparation:

The visit focused on students specializing in IT fields (B.Sc. – IT and M.Sc.-IT), aligned with their syllabus covering Computer Networks. A prior permission is sought from the CETTM.

Execution:

Students were instructed to assemble at Vikhroli station, from where they take auto-rickshaws to reach CETTM. A representative from CETTM assists in coordinating the students' visit. The group gathers in Room No G06, where CETTM conducts an introductory session from 10:00 AM to 11:45 AM.

Session Breakdown:

Session II (11:45 AM - 1:30 PM):

Two batches are formed, with Batch I visiting the Switching Lab, and Batch II exploring the Transmission Media Lab.

Both batches alternated between labs to gain insights into communication media, exchange operations, and related instruments.

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Lunch Break (1:30 PM - 2:30 PM):

Session III (2:30 PM - 3:40 PM):

The third session combines both batches in the GSM Lab, offering insights into CDMA and GSM technology.

Session IV (3:45 PM - 4:30 PM):

The final session takes place in the Broadband Lab, connecting theoretical concepts with practical applications.

Outcomes:

The industrial visit proves to be a valuable and enriching experience for both students and faculty. It provides a practical understanding of telecom technologies, allowing students to relate theoretical knowledge to real-world applications.

In conclusion, the visit to CETTM significantly contributed to the educational journey of the students, aligning classroom teachings with industry practices. The hands-on experience and exposure to cutting-edge technologies were invaluable, and the entire team expresses gratitude for the management's support.

Photographs of the Visit



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H. B. Badkar

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A.Y. 2022-23

Report of Visit to RBI Monetary Museum, Mumbai

Date: 15th, October, 2022.

Time: 9.00 am to 2.00 pm.

Venue: RBI Monetary Museum, Mumbai.

Number of Students: 25

Participants: FYBCOM, FYBMS, and FYBAF Students

Objective: To create awareness about the functioning of the Reserve Bank of India

Accompanied by: Asst. Prof. Nadeem Menon and Asst. Prof. Sunita Gawande

Navneet College of Arts, Science, and Commerce, under the aegis of Navneet Education Society, organized an academic tour to the Reserve Bank of India (RBI) Monetary Museum in Mumbai on Friday, October 15, 2022. The tour was attended by 25 students from FYBCOM, FYBMS, and FYBAF, along with the guidance of Assistant Professors Nadeem Menon and Sunita Gawande.

Upon reaching the Reserve Bank of India Museum, the students were engaged in an informative session about the evolution of money. A detailed PowerPoint presentation was used to illustrate the historical journey of currency, providing students with a comprehensive understanding of how monetary systems have evolved over time.

Furthermore, the students were enlightened about the crucial functions and roles of the Reserve Bank of India. The visit aimed to demystify the workings of the RBI and shed light on why it is referred to as the "Bankers' Bank." The presentation was interactive, allowing students to ask questions and engage in discussions, thereby enhancing their comprehension of the subject matter.

Outcomes:

The academic tour achieved its primary goal of enhancing students' awareness of the RBI's functions. Through an engaging presentation on the evolution of money, students gained a comprehensive understanding of the historical trajectory of currency systems. The interactive nature of the session facilitated active participation, allowing students to ask questions and engage in discussions, fostering a dynamic learning environment. The visit provided practical insights into the roles and functions of the RBI to the first year level students.

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A.Y. 2022-23

Report of Visit to Navneet Publication Pvt. Ltd., Virar, Thane

Date: 16th November, 2022.

Venue: Production Unit of Navneet Publications Pvt. Ltd.

Number of Students: 42

On November 15, 2022, Navneet College organized a one-day industrial visit for students to the production unit of Navneet Publications Pvt. Ltd. located in Virar. The visit aimed to provide students with practical insights into the internal workings of a corporate entity, aligning with the college's commitment to holistic education. Following the industrial visit, a recreational segment was planned, with students heading to the nearby water park, Great Escape.

Industrial visits are now integral to the curriculum, offering students a unique opportunity to bridge the gap between theoretical knowledge and practical application in the corporate world. The main objective is to expose students to the real-world workings of companies, fostering a deeper understanding of industrial processes and employment practices.

During the visit to Navneet Publications Pvt. Ltd., students had the opportunity to interact with professionals, observe working methods, and gain insights into the application of theoretical knowledge in a real-world setting. The visit provided exposure to current industry practices, allowing students to witness the operation of machines and understand the underlying principles. This firsthand experience served to complement the academic curriculum and enhance the students' overall learning experience.

Outcomes:

The industrial visit to Navneet Publications Pvt. Ltd. proved highly beneficial for the 42 participating students from various branches of Navneet College. It facilitated a seamless integration of theoretical concepts with practical application, offering a firsthand understanding of corporate operations. The exposure to industry practices, interaction with professionals, and the addition of a recreational visit to the Great Escape Water Park collectively enriched the students' educational experience, providing a holistic perspective on the intricacies of the corporate world.

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Photographs of the Visit



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University Circular on Field-based Project Work for Foundation Course Paper I, II, III and IV and List of Students Completing Field Projects during A.Y. 2022-23

University of Mumbai



No.UG /ICD/2016-17/276

Mumbai - 400 032

21st October, 2016

To,
The Principals of the affiliated Colleges in Arts, Science & Commerce.

Sub :- Assignment and evaluation of the project work.

Ref :- University Circular Nos :-

1) UG/06 of 2014, dated 23rd June, 2014

2) UG/35 of 2015, dated 30th July, 2015

And

3) UG/76 of 2016-17, dated 3rd October, 2016

Sir / Madam,

With reference to the Circulars above, every students will be assigned a project for the Skill enhancement course i.e. Foundation Course, Foundation course in National Service Scheme (NSS), Foundation Course in National Cadet Corps (NCC), Foundation Course in Extension Activity, Foundation Course in Physical Education (Phys Ed). The project will be evaluated on the basis of project report and the presentation made by the students.

It is suggested that such project may be assigned to the students in the Diwali Vacation, if project are not submit till date and may be evaluated after the vacation period for the first semester examination of the academic year 2016- 17.

Yours faithfully,

P. S. Ohyanwar
Assistant Registrar
(UG & PG Section)

No. UG / 276 - A of 2016

MUMBAI-400 032

21st October, 2016

Copy forwarded with Compliments for information to:-

1. The Deans, faculties of Arts, Science & Commerce,
2. The Professor-cum-Director, Institute of Distance & Open Learning (IDOL)
3. The Director, Board of College and University Development,
4. The Co-Ordinator, University Computerization Centre,
5. The Controller of Examinations.

P. S. Ohyanwar
Assistant Registrar
(UG & PG Section)

AC 24-06-2016

Item No. 4.76

University of Mumbai



**Bachelor of Commerce (B.Com)
Programme
Three Year Integrated Programme-
Six Semesters
*Course Structure***

Under Choice Based Credit System

**To be implemented from Academic Year- 2016-2017
Progressively**

Faculty of Commerce

**Revised Syllabus of Courses of B.Com. Programme at Semester I
with Effect from the Academic Year 2016-2017**

Skill Enhancement Courses (SEC)

6. Foundation Course - I

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Overview of Indian Society	05
2	Concept of Disparity- 1	10
3	Concept of Disparity-2	10
4	The Indian Constitution	10
5	Significant Aspects of Political Processes	10
	Total	45

Sr. No.	Modules / Units
1	Overview of Indian Society
	Understand the multi-cultural diversity of Indian society through its demographic composition: population distribution according to religion, caste, and gender; Appreciate the concept of linguistic diversity in relation to the Indian situation; Understand regional variations according to rural, urban and tribal characteristics; Understanding the concept of diversity as difference
2	Concept of Disparity- 1
	Understand the concept of disparity as arising out of stratification and inequality; Explore the disparities arising out of gender with special reference to violence against women, female foeticide (declining sex ratio), and portrayal of women in media; Appreciate the inequalities faced by people with disabilities and understand the issues of people with physical and mental disabilities
3	Concept of Disparity-2
	Examine inequalities manifested due to the caste system and inter-group conflicts arising thereof; Understand inter-group conflicts arising out of communalism; Examine the causes and effects of conflicts arising out of regionalism and linguistic differences
4	The Indian Constitution
	Philosophy of the Constitution as set out in the Preamble; The structure of the Constitution-the Preamble, Main Body and Schedules; Fundamental Duties of the Indian Citizen; tolerance, peace and communal harmony as crucial values in strengthening the social fabric of Indian society; Basic features of the Constitution
5	Significant Aspects of Political Processes
	The party system in Indian politics; Local self-government in urban and rural areas; the 73rd and 74th Amendments and their implications for inclusive politics; Role and significance of women in politics

Topics for Project Guidance: Growing Social Problems in India:

- Substance abuse- impact on youth & challenges for the future
- HIV/AIDS- awareness, prevention, treatment and services
- Problems of the elderly- causes, implications and response
- Issue of child labour- magnitude, causes, effects and response
- Child abuse- effects and ways to prevent
- Trafficking of women- causes, effects and response

Note:

Out of the 45 lectures allotted for 5 units for Semester I, about 15 lectures may be allotted for project guidance

University of Mumbai



**Revised Syllabus
and
Question Paper Pattern
of Courses of
Bachelor of Commerce Programme
Second Year
Semester III and IV**

**Under Choice Based Credit, Grading and
Semester System**

To be implemented from Academic Year 2017-2018

Faculty of Commerce

**Revised Syllabus of Courses of B.Com. Programme at Semester III
with Effect from the Academic Year 2017-2018**

**2 Ability Enhancement Courses (AEC)
2B * Skill Enhancement Courses (SEC) Group B**

6. Foundation Course- Contemporary Issues- III

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Human Rights Provisions, Violations and Redressal	12
2	Dealing With Environmental Concerns	11
3	Science and Technology I	11
4	Soft Skills for Effective Interpersonal Communication	11
Total		45

Sr. No.	Modules / Units
1	<p>Human Rights Violations and Redressal</p> <p>A. Scheduled Castes- Constitutional and legal rights, Forms of violations, Redressal mechanisms. (2 Lectures)</p> <p>B. Scheduled tribes- Constitutional and legal rights, Forms of violations, Redressal mechanisms. (2 Lectures)</p> <p>C. Women- Constitutional and legal rights, Forms of violations, Redressal mechanisms. (2 Lectures)</p> <p>D. Children- Constitutional and legal rights, Forms of violations, Redressal mechanisms. (2 Lectures)</p> <p>E. People with Disabilities, Minorities, and the Elderly population- Constitutional and legal rights, Forms of violations, Redressal mechanisms. (4 Lectures)</p>
2	<p>Dealing With Environmental Concerns</p> <p>A. Concept of Disaster and general effects of Disasters on human life- physical, psychological, economic and social effects. (3 Lectures)</p> <p>B. Some locally relevant case studies of environmental disasters. (2 Lectures)</p> <p>C. Dealing with Disasters - Factors to be considered in Prevention, Mitigation (Relief and Rehabilitation) and disaster Preparedness. (3 Lectures)</p> <p>D. Human Rights issues in addressing disasters- issues related to compensation, equitable and fair distribution of relief and humanitarian approach to resettlement and rehabilitation. (3 Lectures)</p>
3	<p>Science and Technology – I</p> <p>A. Development of Science- the ancient cultures, the Classical era, the Middle Ages, the Renaissance, the Age of Reason and Enlightenment. (3 Lectures)</p> <p>B. Nature of science- its principles and characteristics; Science as empirical, practical, theoretical, validated knowledge. (2 Lectures)</p> <p>C. Science and Superstition- the role of science in exploding myths, blind beliefs and prejudices; Science and scientific temper- scientific temper as a fundamental duty of the Indian citizen. (3 Lectures)</p> <p>D. Science in everyday life- technology, its meaning and role in development; Interrelation and distinction between science and technology. (3 Lectures)</p>
4	<p>Soft Skills for Effective Interpersonal Communication</p> <p>Part A (4 Lectures)</p> <p>I) Effective Listening - Importance and Features.</p> <p>II) Verbal and Non-Verbal Communication; Public-Speaking and Presentation Skills.</p> <p>III) Barriers to Effective Communication; Importance of Self-Awareness and Body Language.</p> <p>Part B (4 Lectures)</p> <p>I) Formal and Informal Communication - Purpose and Types.</p> <p>II) Writing Formal Applications, Statement of Purpose (SOP) and Resume.</p> <p>III) Preparing for Group Discussions, Interviews and Presentations.</p> <p>Part C (3 Lectures)</p> <p>I) Leadership Skills and Self-Improvement - Characteristics of Effective Leadership.</p> <p>II) Styles of Leadership and Team-Building.</p>

References

1. Asthana, D. K., and Asthana, Meera, *Environmental Problems and Solutions*, S. Chand, New Delhi, 2012.
2. Bajpai, Asha, *Child Rights in India*, Oxford University Press, New Delhi, 2010.
3. Bhatnagar Mamta and Bhatnagar Nitin, *Effective Communication and Soft Skills*, Pearson India, New Delhi, 2011.
4. G Subba Rao, *Writing Skills for Civil Services Examination*, Access Publishing, New Delhi, 2014
5. Kaushal, Rachana, *Women and Human Rights in India*, Kaveri Books, New Delhi, 2000.
6. Mohapatra, Gaur Krishna Das, *Environmental Ecology*, Vikas, Noida, 2008.
7. Motilal, Shashi, and Nanda, Bijoy Lakshmi, *Human Rights: Gender and Environment*, Allied Publishers, New Delhi, 2007.
8. Murthy, D. B. N., *Disaster Management: Text and Case Studies*, Deep and Deep Publications, New Delhi, 2013.
9. Parsuraman, S., and Unnikrishnan, ed., *India Disasters Report II*, Oxford, New Delhi, 2013
10. Reza, B. K., *Disaster Management*, Global Publications, New Delhi, 2010.
11. Sathe, Satyaranjan P., *Judicial Activism in India*, Oxford University Press, New Delhi, 2003.
12. Singh, Ashok Kumar, *Science and Technology for Civil Service Examination*, Tata McGraw Hill, New Delhi, 2012.
13. Thorpe, Edgar, *General Studies Paper I Volume V*, Pearson, New Delhi, 2017.

Projects / Assignments (for Internal Assessment)

- i. Projects/Assignments should be drawn for the component on Internal Assessment from the topics in **Module 1 to Module 4**.
- ii. Students should be given a list of possible topics - at least 3 from each Module at the beginning of the semester.
- iii. The Project/Assignment can take the form of Street-Plays / Power-Point Presentations / Poster Exhibitions and similar other modes of presentation appropriate to the topic.
- iv. Students can work in groups of not more than 8 per topic.
- v. Students must submit a hard / soft copy of the Project / Assignment before appearing for the semester end examination.

QUESTION PAPER PATTERN (Semester III)

The Question Paper Pattern for Semester End Examination shall be as follows:

TOTAL MARKS: 75

DURATION: 150 MINUTES

QUESTION NUMBER	DESCRIPTION	MARKS ASSIGNED
1	i. Question 1 A will be asked on the meaning / definition of concepts / terms from all Modules. ii. Question 1 B will be asked on the topic of the Project / Assignment done by the student during the Semester iii. In all 8 Questions will be asked out of which 5 have to be attempted.	a) Total marks: 15 b) For 1 A, there will be 3 marks for each sub-question. c) For 1 B there will be 15 marks without any break-up.
2	Descriptive Question with internal option (A or B) on Module 1	15
3	Descriptive Question with internal option (A or B) on Module 2	15
4	Descriptive Question with internal option (A or B) on Module 3	15
5	Descriptive Question with internal option (A or B) on Module 4	15

**Revised Syllabus of Courses of B.Com. Programme at Semester IV
with Effect from the Academic Year 2017-2018**

**2 Ability Enhancement Courses (AEC)
2B * Skill Enhancement Courses (SEC) Group B**

6. Foundation Course- Contemporary Issues- IV

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Significant, Contemporary Rights of Citizens	12
2	Approaches to understanding Ecology	11
3	Science and Technology –II	11
4	Introduction to Competitive Exams	11
Total		45

Sr. No.	Modules / Units
1	Significant, Contemporary Rights of Citizens
	<p>A. Rights of Consumers-Violations of consumer rights and important provisions of the Consumer Protection Act, 2016; Other important laws to protect consumers; Consumer courts and consumer movements. (3 Lectures)</p> <p>B. Right to Information- Genesis and relation with transparency and accountability; important provisions of the Right to Information Act, 2005; some success stories. (3 Lectures)</p> <p>C. Protection of Citizens'/Public Interest-Public Interest Litigation, need and procedure to file a PIL; some landmark cases. (3 Lectures)</p> <p>D. Citizens' Charters, Public Service Guarantee Acts. (3 Lectures)</p>
2	Approaches to understanding Ecology
	<p>A. Understanding approaches to ecology- Anthropocentrism, Biocentrism and Eco centrism, Ecofeminism and Deep Ecology. (3 Lectures)</p> <p>B. Environmental Principles-1: the sustainability principle; the polluter pays principle; the precautionary principle. (4 Lectures)</p> <p>C. Environmental Principles-2: the equity principle; human rights principles; the participation principle. (4 Lectures)</p>
3	Science and Technology –II
	<p>Part A:Some Significant Modern Technologies, Features and Applications (7 Lectures)</p> <p>i. Laser Technology- Light Amplification by Stimulated Emission of Radiation; use of laser in remote sensing, GIS/GPS mapping, medical use.</p> <p>ii. Satellite Technology- various uses in satellite navigation systems, GPS, and imprecise climate and weather analyses.</p> <p>iii. Information and Communication Technology- convergence of various technologies like satellite, computer and digital in the information revolution of today's society.</p> <p>iv. Biotechnology and Genetic engineering- applied biology and uses in medicine, pharmaceuticals and agriculture; genetically modified plant, animal and human life.</p> <p>v. Nanotechnology- definition: the study, control and application of phenomena and materials at length scales below 100 nm; uses in medicine, military intelligence and consumer products.</p> <p>Part B:Issues of Control, Access and Misuse of Technology. (4 Lectures)</p>

Sr. No.	Modules / Units
4	Introduction to Competitive Exams
	<p>Part A. Basic information on Competitive Examinations- the pattern, eligibility criteria and local centres:</p> <ul style="list-style-type: none"> i. Examinations conducted for entry into professional courses - Graduate Record Examinations (GRE), Graduate Management Admission Test (GMAT), Common Admission Test (CAT) and Scholastic Aptitude Test (SAT). ii. Examinations conducted for entry into jobs by Union Public Service Commission, Staff Selection Commission (SSC), State Public Service Commissions, Banking and Insurance sectors, and the National and State Eligibility Tests (NET / SET) for entry into teaching profession. <p>Part B. Soft skills required for competitive examinations- (7 Lectures)</p> <ul style="list-style-type: none"> i. Information on areas tested: Quantitative Ability, Data Interpretation, Verbal Ability and Logical Reasoning, Creativity and Lateral Thinking ii. Motivation: Concept, Theories and Types of Motivation iii. Goal-Setting: Types of Goals, SMART Goals, Stephen Covey's concept of human endowment iv. Time Management: Effective Strategies for Time Management v. Writing Skills: Paragraph Writing, Report Writing, Filing an application under the RTI Act, Consumer Grievance Letter.

References

1. Asthana, D. K., and Asthana, Meera, *Environmental Problems and Solutions*, S. Chand, New Delhi, 2012.
2. Bajpai, Asha, *Child Rights in India*, Oxford University Press, New Delhi, 2010.
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9. Parsuraman, S., and Unnikrishnan, ed., *India Disasters Report II*, Oxford, New Delhi, 2013
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4	Descriptive Question with internal option (A or B) on Module 3	15
5	Descriptive Question with internal option (A or B) on Module 4	15



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NAVNEET COLLEGE OF COMMERCE & SCIENCE

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List of Students along with the details of Title, Place of Work and Duration Certified by the Principal

PRINCIPAL

Gilderlane Mun. School Bldg. Belasis Bridge, Opp. Rly. Stn. Mumbai Central, Mumbai 400 008. Navneet College of Commerce & Science
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Sr. No.	Program Code	List of students undertaking project work/field work/internship	Title of the Project	Place of Work	Duration
1	FY B. Com	ANSARI SAMINA SHABBIR	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
2	FY B. Com	ANSARI MARYAM MOHD	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
3	FY B. Com	ANSARI YAHYAH YASEEN	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
4	FY B. Com	ARABIYANI FAIZAN RAUF	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
5	FY B. Com	AWADE MANGESH SIDDHARTH	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
6	FY B. Com	BAIG NAZMA MOHAMED	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
7	FY B. Com	BANDABE AKHIL DASHARATH	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
8	FY B. Com	BARIA ADITYA KIRIT	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
9	FY B. Com	BARUA VISHAKA ADESH	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
10	FY B. Com	BENDRE HEMANT SANJAY	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
11	FY B. Com	BHAGAT VIBHUTI KUMAR RAMBABU	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months
12	FY B. Com	BHAVSAR KHUSHI BHADRESH	HIV AIDS AND STRESS MANAGEMENT	Nagpada	2 months

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13	FY B. Com	BOMMAKANTI VIKRAM NARHARI	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
14	FY B. Com	BORICHA UMANG HARESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
15	FY B. Com	CHAWAN PRANAV YOGESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
16	FY B. Com	CHEULKAR OM RAJAN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
17	FY B. Com	CHU VALERIE EDWARDENPING	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
18	FY B. Com	DESHMUKH SANDEEP SANJAY	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
19	FY B. Com	DHADVE BHUSHAN SANDESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
20	FY B. Com	FURIA SIDDH HITESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
21	FY B. Com	GAVADE VINAYAK VIJAY	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
22	FY B. Com	GHADAI KHUBAIB MOHDTAHIR	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Kamathipura	2 months
23	FY B. Com	GHAZI ZUBIYA IMTIYAZ AHMED	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
24	FY B. Com	GONE ADITYA NARSIMULU	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
25	FY B. Com	GOSWAMI KOMAL MAHESHPURI	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
26	FY B. Com	GUJAR PREM DHANIRAM	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months

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27	FY B. Com	HAIDERY ABBAS KHUZEMA	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
28	FY B. Com	HARIJAN SONI RAMCHANDRA	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
29	FY B. Com	JAGADE YOGESH ANKUSH	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
30	FY B. Com	JOSHI KULDEEP PARASMAL	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
31	FY B. Com	KAMBLE MANSVI SANTOSH	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
32	FY B. Com	KAMBLE HARSH HASNAPPA	PROBLE OF ELDERLY AND NIP 1991 & IT'S IMPACT	Mumbai Central	2 months
33	FY B. Com	KASHYAP ANGAD UDAYJEETSINGH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
34	FY B. Com	KATKE DARSH DINESH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
35	FY B. Com	KAZI FOUZIYA SALIM	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
36	FY B. Com	KHAN AFRIN AZAM	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
37	FY B. Com	KHAN IQRA VASIULLAH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
38	FY B. Com	KHANNA ANJALI RAHULKKHANNA	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
39	FY B. Com	KOKARE TANISHQ RAVINDRA	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
40	FY B. Com	KOLI ARTI MAHESH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months

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41	FY B. Com	KOLI HARSHALI RAMESH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
42	FY B. Com	MAHATO SACHIN MANOJ	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Charni Road	2 months
43	FY B. Com	MAHIDA JAY SANJAY	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
44	FY B. Com	MAHIDA VARSHA RAMESH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
45	FY B. Com	MAKWANA HARSH LAXMAN	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
46	FY B. Com	MANDALIA DARSHAN DEEPAK	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
47	FY B. Com	MANDHRE BHUSHAN SUNIL	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
48	FY B. Com	MANSURI MOHAMMED AYAN MOHAMMED	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
49	FY B. Com	MARU DEEPAK RAMESH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
50	FY B. Com	MEER IMAMULLAH MATIULLAH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
51	FY B. Com	MER RAKESH SHANITILAL	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
52	FY B. Com	MISHRA SHIVAM SUNDERSHYAM	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Bandra (Behrampada)	2 months
53	FY B. Com	MISHRA VIMAL BINAYKUMAR	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
54	FY B. Com	MUSHARRAF MOHAMMMAD PERWEZ	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months

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		MOHAMMADREYAZAHMAD			
55	FY B. Com	NAIK SANDEEP SUNIL	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
56	FY B. Com	PARAB KISHOREE BHIKAJEE	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
57	FY B. Com	PARAKH RAUNAK GHANSHYAM	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
58	FY B. Com	PARDESHI ADITI SHASHI	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
59	FY B. Com	PARDESHI PRATHAM PRATHAM	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
60	FY B. Com	PARTE SARVESH GANESH	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
61	FY B. Com	PATEL RACHNA RAMAN	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
62	FY B. Com	PEDNEKAR OMKAR GOVIND	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
63	FY B. Com	PHANSE GANESH NAMDEVPHANSE	HIV AIDS AND IMPACT OF MASS MEDIA ON CULTURE	Charni Road	2 months
64	FY B. Com	QURESHI FARHAN LIYAKAT	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
65	FY B. Com	QURESHI SAAD ASLAM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
66	FY B. Com	GUPTA VISHAL RAJESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
67	FY B. Com	RATHOD DHIREN RAMESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months

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68	FY B. Com	RAWOOL AMIT RAJAN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
69	FY B. Com	RIZVI MOHAMMAD KUMAYT FIDAABBAS	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
70	FY B. Com	SAINDANE SHWETA SURESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
71	FY B. Com	SAKPAL RAKESH RAMCHANDRA	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
72	FY B. Com	SELIYA HASHISHA HISAMUDDIN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
73	FY B. Com	SHAH KINJAL NAVINCHANDRA	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Worli	2 months
74	FY B. Com	SHAIKH MAAZ KISMATALI	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
75	FY B. Com	SHAIKH SIMRAN SAGIRAHMED	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
76	FY B. Com	SHAIKH IRFANA IQBALAHMED	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
77	FY B. Com	SHAIKH ADIL YUSUF	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
78	FY B. Com	SHARMA NANDINI NEERAJ	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
79	FY B. Com	SHEDEKAR SURAJ DATTARAM	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
80	FY B. Com	SIDDIQUE DANISH MOHDSHAKEEL	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
81	FY B. Com	SINGH AYUSH RAJESH	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months

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82	FY B. Com	SOLANKI GANESH BHARAT	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
83	FY B. Com	SOLANKI JITU RAMESH	PROBLEM OF ELDERLY AND GENETICALLY MODIFIED CROPS	Mahalaxmi	2 months
84	FY B. Com	TAMORE PRANITA PURUSHOTTAM	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
85	FY B. Com	TAYADE SURAJ MAHENDRA	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
86	FY B. Com	THAWARE SNEHA SANTOSH	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
87	FY B. Com	TIWARI SURAJ ARVIND	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
88	FY B. Com	VINJUDA PRAVIN MANGALJI	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
89	FY B. Com	VINJUDA KANTA MANGALJI	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
90	FY B. Com	VISHWAKARMA SHIVAM RAMJI	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
91	FY B. Com	WAGHELA VISHAL KISHOR	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
92	FY B. Com	YADAV SIDDHIKESH SUCHIT	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
93	FY B. Com	YADAV PAVAN KAILASH	CHILD ABUSE AND CONFLICTS IN CONTEMPORARY SOCIETY	Mahim	2 months
94	FY B. Com	YADAV KUMAR SURYAKANT	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
95	FY B. Com	YADAV AWDHESH RAMBRIKSH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months

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96	FY B. Com	YERAM NAMRATA HEMANT	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
97	FY B. Com	MADRE SAFA KAMAL	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
98	FY B. Com	VICHARE SHUBHAM ANIL	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
99	FY B. Com	GUPTA NIHIL RAKESH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
100	FY B. Com	SOLANKI KASHISH VINOD	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
101	FY B. Com	TIWARI SUMIT SATISH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
102	FY B. Com	PEDNEKAR AKANKSHA JAYDAS	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
103	FY B. Com	CHOUHAN PRANJAL MANGESH	DRUG ADDICTION AND DEVELOPMENT PROJECT - HUMAN RIGHTS VIOLATION	Jogeshwari	2 months
104	FY B. Com	GUPTA ANKIT AJAY	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
105	FY B. Com	KOHLI ANCHAL KAMALKOHLI	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
106	FY B. Com	JARIA PADMAJA SUNIL	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
107	FY B. Com	ANSARI ABDULLAH MOHDATIF	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
108	FY B. Com	DHARIA FALGUNI KAILASH	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
109	FY B. Com	MIRZA AHMED IRFAN	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months

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110	FY B. Com	JADAV HARSHAD LAKHDIR	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
111	FY B. Com	SHAIKH TAUSIF ABIDALI	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
112	FY B. Com	SHAH FAIZAN SHABUDDIN	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
113	FY B. Com	ADWANI BILAL SALIM	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
114	FY B. Com	YADAV SUPRIYA SHESH	HIV AIDS AND NIP 1991 - ITS IMPACT	Byculla	2 months
115	FY B. Com	SINGHVI KHUSHI RAMESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
116	FY B. Com	SHAIKH SUMAIYA MOHAMMEDARIF	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
117	FY B. Com	VARMA PRAJAKTA RAMPRATAP	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
118	FY B. Com	GHOGHARI IQRA MOHD IMRAN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
119	FY B. Com	ANSARI SHAGUFTA MOHDNASIR	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
120	FY B. Com	MAHESH PRATHAM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
121	FY B. Com	NISHAD SATISH BHAVANDEEN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
122	FY B. Com	TURK ANAS USMAN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
123	FY B. Com	KHULKHULE RAKESH VIJAY	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months

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124	FY B. Com	MATE PARIN NAMDEV	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Dockyard Road	2 months
125	FY B. Com	NIRBAN KASHIF AKRAMNIRBAN	PROBLEM OF ELDERLY AND SUSTAINABLE DEVELOPMENT	Currey Road	2 months
126	FY B. Com	SATHE JANHAVI DILIP	PROBLEM OF ELDERLY AND SUSTAINABLE DEVELOPMENT	Currey Road	2 months
127	FY B. Com	BACCHE SIDDHESH MANGESH	PROBLEM OF ELDERLY AND SUSTAINABLE DEVELOPMENT	Currey Road	2 months
128	FY B. Com	KHAN ANAS MASHOOR ZARINA	PROBLEM OF ELDERLY AND SUSTAINABLE DEVELOPMENT	Currey Road	2 months
129	FY B. Com	SHAIKH AALAMGEER MOHD. VALZAHIR NOORUNNISA	PROBLEM OF ELDERLY AND SUSTAINABLE DEVELOPMENT	Currey Road	2 months
130	SY B. Com	BELUSE AATISH RAJU	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
131	SY B. Com	BENGALI HUFIRISH JEHANGIR	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
132	SY B. Com	BHAGANE AJAY GOARAJI	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
133	SY B. Com	BHALERAO ANUJ ULHAS	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
134	SY B. Com	CHAVAN PRATIK RAJENDRA	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
135	SY B. Com	DABHOLKAR DIKSHA RAJENDRA	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
136	SY B. Com	DHANAWADE PAVAN GANESH	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
137	SY B. Com	ANSARI MOHD INSHAL MOHD EJAZ	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months

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138	SY B. Com	GANGAWANE ROHAN SHAM	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
139	SY B. Com	GHADIGAONKAR SHWETA KRISHNA	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
140	SY B. Com	GOLVANKAR TUSHAR SUNIL	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Parel	2 months
141	SY B. Com	GOSWAMI HANSA SHRAVANPURI	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
142	SY B. Com	HELIYA PARAS JAYESH	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
143	SY B. Com	HELIYA KARTIK RAJESH	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
144	SY B. Com	IMLAPUR JONAH RAJARATNA	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
145	SY B. Com	JADHAV SHRAVANI PRASHANT	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
146	SY B. Com	JADHAV PRATHAMESH NITIN	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
147	SY B. Com	JADHAV SHRADDHA DHONDIRAM	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
148	SY B. Com	JAIN MUGDHA ANIL	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
149	SY B. Com	KADAM PRATHAMESH SHAMSUNDAR	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
150	SY B. Com	KANOJIA ARYAN VINOD	FUTURE OF ELECTRIC CARS - INDIAN SCENARIO AND USE OF GPS	Vidyavihar	2 months
151	SY B. Com	KANUKALE SAURABH PRAMOD	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months

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152	SY B. Com	KHADAPKAR SAHIL VIJAY	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
153	SY B. Com	KHAN FARHAN AKRAM	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
154	SY B. Com	KHAN SHAVEZ JAMIL	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
155	SY B. Com	KHAN MEHRAN SALIM	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
156	SY B. Com	KHOT KAIF BASHIR	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
157	SY B. Com	MAKWANA HITEN JAGJIVAN	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
158	SY B. Com	MANDAL PIYUSH PRASHANT	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
159	SY B. Com	MANIYAR RISHIKA PIYUSH	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
160	SY B. Com	MEHROLIYA ANKITKUMAR RAMKUMAR	COMMUNICATION - ESSENTIAL AND RIGHT TO INFORMATION ACT, 2005	Girgaon	2 months
161	SY B. Com	MOMIN SUFIYAN NOORMOHAMMED	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
162	SY B. Com	NADGA MANAN DHIRAJ	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
163	SY B. Com	USHKELA RAHUL NARSIMLU	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
164	SY B. Com	PARULEKAR MANALI BHALCHANDRA	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
165	SY B. Com	PATEL SADIKALI SHAKIRALI	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months

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166	SY B. Com	PRAJAPATI ADITI CHOTELALA	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
167	SY B. Com	RATHOD PUNIT PANKAJ	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
168	SY B. Com	RATHOD SHAILESH HARISH	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
169	SY B. Com	SALUNKHE HRISHIKESH ARUN	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
170	SY B. Com	SANDIS PRAKASH SOMJI	SELF DEVELOPMENT- NEED AND IMPORTANCE AND NANO TECHNOLOGY	Dadar	2 months
171	SY B. Com	SATAVSE AARTI DHONDU	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
172	SY B. Com	SHAIKH ASMA KASAM	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
173	SY B. Com	SHAIKH NAUMANN AFZAL HAQUE	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
174	SY B. Com	SHARMA MOHITKUMAR SHYAMSUNDAR	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
175	SY B. Com	SIDDIQUI MAZHAR ZAFAR	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
176	SY B. Com	SINGH JIYA KARANKISHAN	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
177	SY B. Com	SOLANKI LAXMI MADHU	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
178	SY B. Com	SYED MAKSUDA MUJIBUR RAHMAN	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months
179	SY B. Com	TARWARI RABAB TAHER	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Lower Parel	2 months

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180	SY B. Com	UPADHYAY NEERAJ HARISHANKAR	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
181	SY B. Com	VANIA DARSHANA SHAMJI	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
182	SY B. Com	VERMA AMITKUMAR RAMSHANKAR	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
183	SY B. Com	YADAV GUDIYA RADHESHYAM	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
184	SY B. Com	PAWAR KRUPALI PRAKASH	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
185	SY B. Com	ANSARI TANZEEM NAZIM	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
186	SY B. Com	KHAN SHAHRUKH IMTIAZ	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
187	SY B. Com	SHAIKH ANWARUL HAQUE	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
188	SY B. Com	SHARMA SATYAM PARMANAND	POLLUTION - SCENARIO IN MUMBAI CITY AND LASER TECHNOLOGY	Mazgaon	2 months
189	SY B. Com	LASANWALA TANVEER ALI	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
190	SY B. Com	JOSHI ATHARVA PRADIP	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
191	SY B. Com	MITTAL ANIKET MANOJ	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
192	SY B. Com	KABRA MITALI NILESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
193	SY B. Com	KHUMAN JATIN ASHOK	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months

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194	SY B. Com	BARIA JASH NARESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
195	SY B. Com	LOKARE CHINMAY MADHUKAR	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
196	SY B. Com	QURESHI MOHAMMEDWASIF MOHAMMEDBASEEM	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
197	SY B. Com	JADHAV DIPESH DILIP	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
198	SY B. Com	NINGERI STEPHAN SHANTHRAJ	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
199	SY B. Com	SHAIKH SANIABANU MOHDLALA	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
200	SY B. Com	JAIN SANKALP PANKAJ	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
201	SY B. Com	THAKUR NOUF JAFFER	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
202	SY B. Com	MANDHAN ANISH RAJESH	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
203	SY B. Com	MAHAJAN ADITYA VIVEK	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
204	SY B. Com	SINGH RISHABH SUSHIL	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
205	SY B. Com	PUROHIT SHIVAM VIJAY	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
206	SY B. Com	SHAIKH AYESHA SHAHID	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months
207	SY B. Com	SHAIKH ZAID SAGIR	POLLUTION - SCENARIO IN MUMBAI CITY AND EMOTIONAL INTELLIGENCE	Wadala	2 months

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208	SY B. Com	TALKAR PRABHAVATI MANOHAR	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
209	SY B. Com	VAGHARI BHAVESH RAMESHBHAI	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
210	SY B. Com	BALEKAR RUTIK RAMESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
211	SY B. Com	DUBEY ADITYA AWADHESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
212	SY B. Com	RIZVI ALIHAMZA ALIAKBAR	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
213	SY B. Com	SHAIKH SHARMIN SHABBIR	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
214	SY B. Com	BALLU DIVYA CHIRAG	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
215	SY B. Com	SOLANKI SUJAL NARESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
216	SY B. Com	PAWAR MITESH NILESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
217	SY B. Com	SAWARDEKAR SIDDHI HIRAMAN	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Prabhadevi	2 months
218	SY B. Com	HARAWDE NIKITA NATHURAM	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
219	SY B. Com	SOLKAR PRATHAMESH TUKARAM	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
220	SY B. Com	PATEL ANKIT RAMANLAL	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
221	SY B. Com	BHUWAD JAYADEV MOHAN	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months

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222	SY B. Com	GHULE HARSHAL JAGANNATH	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
223	SY B. Com	TELI AMAAN RASHID	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
224	SY B. Com	KOLTE SAHIL SANDEEP SNEHA	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
225	SY B. Com	DANGI DEEPAK LAKHAN SUNITA	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
226	SY B. Com	SAVLA DHURUV RAJESH BHAVINI	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
227	SY B. Com	SHAH DIVY MUKESH GUNVANTI	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
228	SY B. Com	GUPTA KOMAL KISHOR NEELAM	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
229	SY B. Com	KORE ANUSHA SHEKAR DEVAKAMMA	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
230	SY B. Com	PATEL AYMAN ADAMSHA RUBINA	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Matunga	2 months
231	FY BMS	ANSARI MUSTAFA USMANGANI	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
232	FY BMS	DUBEY SHIVAM ASHOK	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
233	FY BMS	FARASH MAHEK FARID	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
234	FY BMS	GIRI SUNNY RAKESH	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
235	FY BMS	JAIN JEEMIT KANHAIYALAL	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months

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236	FY BMS	JOSHI SHREYASH SUNIL	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
237	FY BMS	KAMTEKAR ALPITA RAVINDRA	HIV AIDS AND NIP 1991 - ITS IMPACT	Madanpura	2 months
238	FY BMS	KHAN KULSUM ZIAUDDIN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
239	FY BMS	MARU MAHEK BIPIN	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
240	FY BMS	MORE ROHIT AKARAM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
241	FY BMS	PANDEY SAURABH RAMSAMUGH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
242	FY BMS	SALIMSAYYED GOSH SALIM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
243	FY BMS	SAYED ARIF AZIZ	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
244	FY BMS	SHAH JUNED NAZIBULLA	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Madanpura	2 months
245	FY BMS	SHAIKH AZALEA HANNAN ANSAR	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
246	FY BMS	SHAIKH MOHAMMED MAAZ SALLAUDDIN	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
247	FY BMS	SHAIKH SUHAIB SHAKIRALI	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
248	FY BMS	SHAIKH AAMIR MUKHTARAHMED	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
249	FY BMS	SINGH SHIVAM DEVENDRA	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months

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250	FY BMS	SURYAVANSHI HARSHADA ASHOK	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
251	FY BMS	WAGHAMARE SANIKA SARJERAO	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
252	FY BMS	YADAV SHUBHAM BALGOVIND	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
253	FY BMS	YADAV AMIT CHANDRABHAN	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
254	FY BMS	YADAV KARAN JITA	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
255	FY BMS	SALUNKHE ANAND VITHAL	DRUG ADDICTION AND STRESS MANAGEMENT	Colaba	2 months
256	FY BMS	PATEL GAURAV BHAVESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
257	FY BMS	BISHT VERENDRASINGH SHYAM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
258	FY BMS	CHOUDHARY ZAKWAN ABDULRAUF	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
259	FY BMS	GRACIAS JOHNSON JOSEPH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
260	FY BMS	SHAIKH SAHIL HABIB	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
261	FY BMS	SANAS ARYAN VISHAL	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
262	FY BMS	SAKPAL ROHIT CHANDRAKANT	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
263	FY BMS	SINGH MAANYA SANJEEV	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months

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264	FY BMS	SHAIKH AALAMGEER MOHAMMADVALZAHIR	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
265	FY BMS	PAL JYOTI GAUTAM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Thane	2 months
266	FY BMS	BUDDHA MOHAMMED WAJAHAD SHAUKATALI	HIV AIDS AND NIP 1991 - ITS IMPACT	Thane	2 months
267	FY BMS	KHAN MOHD HAMMAD MOHAMMEDJAVID	HIV AIDS AND NIP 1991 - ITS IMPACT	Thane	2 months
268	FY BMS	KAJAL KUMARI AJAY	HIV AIDS AND NIP 1991 - ITS IMPACT	Thane	2 months
269	FY BMS	BALKESHWAR DARSHAN	HIV AIDS AND NIP 1991 - ITS IMPACT	Thane	2 months
270	FY BMS	GAJERA AASTHA	HIV AIDS AND NIP 1991 - ITS IMPACT	Thane	2 months
271	SY BMS	ANSARI MUHAMMED MUAZ BADAR	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
272	SY BMS	CHAVAN AARYA VINOD	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
273	SY BMS	CHIMANE KARUNA RAMCHANDRA	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
274	SY BMS	D'COSTA JOEL NOEL	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
275	SY BMS	FERNANDES JOEL JOSEPH	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
276	SY BMS	GILATAR HARSH MANISH	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
277	SY BMS	KULKARNI SALONI SANDEEP	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months

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278	SY BMS	KUMAR ROHIT SHREEPAT	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
279	SY BMS	LAD SHANTANU DEEPAK	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
280	SY BMS	MAKWANA HETAL KISHOR	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
281	SY BMS	MARIGNAN NESTER GASPER	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
282	SY BMS	MITHAIWALA SHARIQ ABDULLAH	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Dharavi	2 months
283	SY BMS	PAREKH SWAYAM KAUSHIK	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
284	SY BMS	POL KUMAR NANDKISHOR	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
285	SY BMS	SAWANT MAKRAND JAGNNATH	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
286	SY BMS	SIDDIQUI PARVEEN SHARFUDDIN	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
287	SY BMS	SINGH GUNJAN SUNIL	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
288	SY BMS	SIRVI MOHIT PRAKASH	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
289	SY BMS	YADAV ADITYA RAMAVTAR	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
290	SY BMS	SHAIKH SUNDUS MOHD ARSHAD	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
291	SY BMS	KHAN UMAIR SHAHNAWAZ	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months

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292	SY BMS	MHASKAR DARSHAN CHANDRASHEKHAR	COMMUNICATION - ESSENTIAL AND SOFT SKILLS	Fort	2 months
293	SY BMS	SHAIKH AMAN BALAM	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Dharavi	2 months
294	SY BMS	KHAN SHOAIB ISHAQUE	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Dharavi	2 months
295	SY BMS	JAIWAR SACHIN RAMJEET	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Dharavi	2 months
296	SY BMS	SARDAR AREEBA JAVED	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Dharavi	2 months
297	SY BMS	QURESHI MOHAMMED MAAZ NAUSHAD	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Fort	2 months
298	SY BMS	KHAN FAIZ FERAZ	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Fort	2 months
299	SY BMS	JALAN KRITIKA PRAVIN ANITA	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Fort	2 months
300	SY BMS	MEHTA HEET AMIT PREETI	SELF DEVELOPMENT- NEED AND IMPORTANCE AND EMOTIONAL INTELLIGENCE	Fort	2 months
301	FY BAF	GUPTA VIJAY RAMASARE	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
302	FY BAF	JAIWAL KAJAL SHAILENDRA	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
303	FY BAF	KAMBLE SAHIL NITIN	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
304	FY BAF	KANDI VIGHNESH RAKESH	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
305	FY BAF	MAHADIK VEDANT VIJAY	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months

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306	FY BAF	PAL DEEPAK RAJESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
307	FY BAF	PALVE VANITA RAKHAMAJI	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
308	FY BAF	RATHOD MEGHA HITESH	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
309	FY BAF	SAHU NIKHIL RAJPRATAP	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
310	FY BAF	SHAIKH SHAHAB PARVEZ	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
311	FY BAF	SHINDE SAIRAJ AJIT	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra	2 months
312	FY BAF	SHIRAZI SAKINA MAHMOOD	PROBLEM OF ELDERLY AND STRESS MANAGEMENT	Mahalaxmi	2 months
313	FY BAF	TALAYE RUTUJA GHANASHYAM	PROBLEM OF ELDERLY AND STRESS MANAGEMENT	Mahalaxmi	2 months
314	FY BAF	VANI ATHARVA ASHOK	PROBLEM OF ELDERLY AND STRESS MANAGEMENT	Mahalaxmi	2 months
315	FY BAF	ASHOK PRAJAKTA	PROBLEM OF ELDERLY AND STRESS MANAGEMENT	Mahalaxmi	2 months
316	FY BAF	PRASAD SHIVAM NAVALRAJ	PROBLEM OF ELDERLY AND STRESS MANAGEMENT	Mahalaxmi	2 months
317	FY BAF	SHAIKH ZEESHAN NASIM	CHILD ABUSE AND IMPACT O MASS MEDIA ON CULTURE	Kala Ghoda	2 months
318	FY BAF	SHAIKH MOHAMMED AMAAN NAZREALAM	CHILD ABUSE AND IMPACT O MASS MEDIA ON CULTURE	Kala Ghoda	2 months
319	FY BAF	KHAN MOHAMMED HAMMAD ABDULLA	CHILD ABUSE AND IMPACT O MASS MEDIA ON CULTURE	Kala Ghoda	2 months

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320	FY BAF	BANSODE SAHIL SANJAY	CHILD ABUSE AND IMPACT O MASS MEDIA ON CULTURE	Kala Ghoda	2 months
321	FY BAF	BHERI MOHAMMED ANIS	CHILD ABUSE AND IMPACT O MASS MEDIA ON CULTURE	Kala Ghoda	2 months
322	SY BAF	BAIG MEHARUNISSA HABIB	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Churchgate	2 months
323	SY BAF	JHA ANJALI MURARI	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Churchgate	2 months
324	SY BAF	KATTE PRATIK KIRAN	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Churchgate	2 months
325	SY BAF	KUNCHIKORVE VISHNU PARSHURAM	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Churchgate	2 months
326	SY BAF	KUNWAR JAYANDRA JHANKAR	FUNDAMENTAL RIGHTS OF INDIAN CITIZEN AND CONSUMER COURTS IN INDIA	Churchgate	2 months
327	SY BAF	MARJIT ROMESH SANJAY	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
328	SY BAF	MOMIN MIZBA IMRAN	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
329	SY BAF	PADELKAR DIYA VILAS	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
330	SY BAF	PANDEY PRIYA RAVISHANKAR	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
331	SY BAF	PARUI GOURAV ASHIS	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
332	SY BAF	SHEWADE MAYURI SHASHIKANT	FUTURE OF ELECTRIC CARS - INDIAN SCENERIO AND USE OF GPS	Mahim	2 months
333	SY BAF	SONAWANE PARSHU PRAKASH	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Dadar	2 months

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334	SY BAF	SONKAR RISHI SAHADEV	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Dadar	2 months
335	SY BAF	NOHAR SAKSHI SUNIL	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Dadar	2 months
336	SY BAF	KHAN FAZILA ABDULKUDDUS	STUDY ON INDIAN SUPERSTITION AND SOFT SKILLS	Dadar	2 months
337	SY BAF	SHAIKH SABA NASIR	POLLUTION - SCENARIO IN MUMBAI CITY	Mumbai	2 months
338	SY BAF	DAHAKI SOHAM BHUPENDRA	POLLUTION - SCENARIO IN MUMBAI CITY	Mumbai	2 months
339	SY BAF	MALVANKAR KRUPA VINAYAK	POLLUTION - SCENARIO IN MUMBAI CITY	Mumbai	2 months
340	SY BAF	GUPTA AMRITA MUKTAR	POLLUTION - SCENARIO IN MUMBAI CITY	Mumbai	2 months
341	SY BAF	KADAKUNTLA ANIRUDH DEEPESH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
342	SY BAF	ANSARI NASREEN AKHTAR	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
343	SY BAF	GHOSH SUJIT SUSHANTO	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
344	SY BAF	CHAVAN SAKSHI SANTOSH	YOUTH PROBLEM AND COMPETITIVE EXAMS FOR EMPLOYMENT	Sion	2 months
345	FY BA (Psy)	BAIG MALIKA PARVEZ	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
346	FY BA (Psy)	PANCHASARA ANJALI KANTILAL	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months
347	FY BA (Psy)	GORULE TUSHAR ANANT	HIV AIDS AND NIP 1991 - ITS IMPACT	Kamathipura	2 months

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348	FY BA (Psy)	DHURYE PRATHAMESH PUNAJI	DRUG ADDICTION AND STRESS MANAGEMENT	Bandra (Behrampada)	2 months
349	FY BA (Psy)	SHAIKH SHAHID ILAHI	DRUG ADDICTION AND STRESS MANAGEMENT	Bandra (Behrampada)	2 months
350	FY BA (Psy)	MYSHA SHAKILAHMED SHABANA	DRUG ADDICTION AND STRESS MANAGEMENT	Bandra (Behrampada)	2 months
351	FY BA (Psy)	KHAN MAHEK ASHFAQ	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Sion	2 months
352	FY BA (Psy)	KHAN SAAD NADIM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra (Behrampada)	2 months
353	FY BA (Psy)	KHAN ZAYEEM ANJUM	TRAFFICKING OF WOMEN AND STUDY ON AGRARIAN CRISIS	Bandra (Behrampada)	2 months
354	FY BA (Psy)	KHAN RUSHDA ANJUM	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Bandra (Behrampada)	2 months
355	FY BA (Psy)	MAYEKAR AARDHYA JEEVAN	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Bandra (Behrampada)	2 months
356	FY BA (Psy)	SHAIKH SHYMA SALIM	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Bandra (Behrampada)	2 months
357	FY BA (Psy)	MOHAMMED AHMED SAMEER AHMED SHAIKH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Bandra (Behrampada)	2 months
358	FY BA (MMC)	CHAWAN KRISH	CHILD ABUSE AND SUSTAINABLE DEVELOPMENT	Bandra (Behrampada)	2 months

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University Circular on Practicals for IT Students and Report of the College on IT Practicals conducted during the A.Y. 2022-23

Academic Council 14/06/2018

Item No:4.49

UNIVERSITY OF MUMBAI



Syllabus for T.Y.B.Sc.

Programme: B.Sc.

Subject: Information Technology

(Choice Based Credit System)

(with effect from the academic year 2018 – 2019)

HeB. Allot

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Semester – 5			
Course Code	Course Type	Course Title	Credits
USIT501	Skill Enhancement Course	Software Project Management	2
USIT502	Skill Enhancement Course	Internet of Things	2
USIT503	Skill Enhancement Course	Advanced Web Programming	2
USIT504	Discipline Specific Elective (Any One)	Artificial Intelligence	2
USIT505		Linux System Administration	
USIT506	Discipline Specific Elective (Any One)	Enterprise Java	2
USIT507		Next Generation Technologies	
USIT5P1	Skill Enhancement Course Practical	Project Dissertation	2
USIT5P2	Skill Enhancement Course Practical	Internet of Things Practical	2
USIT5P3	Skill Enhancement Course Practical	Advanced Web Programming Practical	2
USIT5P4	Discipline Specific Elective Practical (Any One)*	Artificial Intelligence Practical	2
USIT5P5		Linux Administration Practical	
USIT5P6	Discipline Specific Elective Practical (Any One)*	Enterprise Java Practical	2
USIT5P7		Next Generation Technologies Practical	
Total Credits			20

(All the practical mentioned in the syllabi are compulsory as per the courses chosen)

Semester – 6			
Course Code	Course Type	Course Title	Credits
USIT601	Skill Enhancement Course	Software Quality Assurance	2
USIT602	Skill Enhancement Course	Security in Computing	2
USIT603	Skill Enhancement Course	Business Intelligence	2
USIT604	Discipline Specific Elective (Any One)	Principles of Geographic Information Systems	2
USIT605		Enterprise Networking	
USIT606	Discipline Specific Elective (Any One)	IT Service Management	2
USIT607		Cyber Laws	
USIT6P1	Skill Enhancement Course Practical	Project Implementation	2
USIT6P2	Skill Enhancement Course Practical	Security in Computing Practical	2
USIT6P3	Skill Enhancement Course Practical	Business Intelligence Practical	2
USIT6P4	Discipline Specific Elective Practical (Any One)*	Principles of Geographic Information Systems Practical	2
USIT6P5		Enterprise Networking Practical	
USIT6P6	Skill Enhancement Course Practical	Advanced Mobile Programming	2
Total Credits			20

***The choice of Practical course is based on the theory Course. For Semester V, USIT504, USIT505, USIT506 and USIT507, the practical courses are USIT5P4, USIT5P5, USIT5P6, USIT5P7. For Semester VI, USIT604, USIT605 the practical courses are USIT6P4, USIT6P5 respectively. Practical Course USIT6P6 is compulsory.**

H. B. Badkar

Project Dissertation Semester V and Project Implementation Semester VI

Chapter 1 to 4 should be submitted in Semester V in spiral binding. These chapter have also to be included in Semester VI report. Semester VI report has to be hard bound with golden embossing. Students will be evaluated based on the dissertation in semester V and dissertation and viva voce in Semester VI.

I. OBJECTIVES

- Describe the Systems Development Life Cycle (SDLC).
- Evaluate systems requirements.
- Complete a problem definition.
- Evaluate a problem definition.
- Determine how to collect information to determine requirements.
- Perform and evaluate feasibility studies like cost-benefit analysis, technical feasibility, time feasibility and Operational feasibility for the project.
- Work on data collection methods for fact finding.
- Construct and evaluate data flow diagrams.
- Construct and evaluate data dictionaries.
- Evaluate methods of process description to include structured English, decision tables and decision trees.
- Evaluate alternative tools for the analysis process.
- Create and evaluate such alternative graphical tools as systems flow charts and state transition diagrams.
- Decide the S/W requirement specifications and H/W requirement specifications.
- Plan the systems design phase of the SDLC.
- Distinguish between logical and physical design requirements.
- Design and evaluate system outputs.
- Design and evaluate systems inputs.
- Design and evaluate validity checks for input data.
- Design and evaluate user interfaces for input.



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- Design and evaluate file structures to include the use of indexes.
- Estimate storage requirements.
- Explain the various file update processes based on the standard file organizations.
- Decide various data structures.
- Construct and evaluate entity-relationship (ER) diagrams for RDBMS related projects.
- Perform normalization for the unnormalized tables for RDBMS related projects
- Decide the various processing systems to include distributed, client/server, online and others.
- Perform project cost estimates using various techniques.
- Schedule projects using both GANTT and PERT charts.
- Perform coding for the project.
- Documentation requirements and prepare and evaluate systems documentation.
- Perform various systems testing techniques/strategies to include the phases of testing.
- Systems implementation and its key problems.
- Generate various reports.
- Be able to prepare and evaluate a final report.
- Brief the maintenance procedures and the role of configuration management in operations.
- To decide the future scope and further enhancement of the system.
- Plan for several appendices to be placed in support with the project report documentation.
- Decide the various processing systems to include distributed, client/server, online and others.
- Perform project cost estimates using various techniques.
- Schedule projects using both GANTT and PERT charts.
- Perform coding for the project.
- Documentation requirements and prepare and evaluate systems documentation.
- Perform various systems testing techniques/strategies to include the phases of testing.
- Systems implementation and its key problems.
- Generate various reports.
- Be able to prepare and evaluate a final report.
- Brief the maintenance procedures and the role of configuration management in operation.
- To decide the future scope and further enhancement of the system.



- Plan for several appendices to be placed in support with the project report documentation.
- Work effectively as an individual or as a team member to produce correct, efficient, well-organized and documented programs in a reasonable time.
- Recognize problems that are amenable to computer solutions, and knowledge of the tool necessary for solving such problems.
- Develop of the ability to assess the implications of work performed.
- Get good exposure and command in one or more application areas and on the software
- Develop quality software using the software engineering principles
- Develop of the ability to communicate effectively.

II. Type of the Project

The majority of the students are expected to work on a real-life project preferably in some industry/ Research and Development Laboratories/Educational Institution/Software Company. Students are encouraged to work in the areas listed below. However, it is **not mandatory** for a student to work on a real-life project. The student can formulate a project problem with the help of her/his Guide and submit the project proposal of the same. **Approval of the project proposal is mandatory.** If approved, the student can commence working on it, and complete it. Use the latest versions of the software packages for the development of the project.

III. SOFTWARE AND BROAD AREAS OF APPLICATION

FRONT END / GUI Tools	.Net Technologies, Java
DBMS/BACK END	Oracle, SQL Plus, MY SQL, SQL Server,
LANGUAGES	C, C++, Java, VC++, C#, R, Python
SCRIPTING LANGUAGES	PHP, JSP, SHELL Scripts (Unix), Tcl/TK,
.NET Platform	F#, C#. Net, Visual C#. Net, ASP.Net
MIDDLE WARE (COMPONENT) TECHNOLOGIES	COM/DCOM, Active-X, EJB
UNIX INTERNALS	Device Drivers, RPC, Threads, Socket programming
NETWORK/WIRELESS TECHNOLOGIES	-

HeBaddar

REALTIME OPERATING SYSTEM/ EMBEDDED SKILLS	LINUX, Raspwerry Pi, Arduine, 8051
APPLICATION AREAS	Financial / Insurance / Manufacturing / Multimedia / Computer Graphics / Instructional Design/ Database Management System/ Internet / Intranet / Computer Networking-Communication Software development/ E-Commerce/ ERP/ MRP/ TCP-IP programming / Routing protocols programming/ Socket programming.

IV. Introduction

The project report should be documented with scientific approach to the solution of the problem that the students have sought to address. The project report should be prepared in order to solve the problem in a methodical and professional manner, making due references to appropriate techniques, technologies and professional standards. The student should start the documentation process from the first phase of software development so that one can easily identify the issues to be focused upon in the ultimate project report. The student should also include the details from the project diary, in which they will record the progress of their project throughout the course. The project report should contain enough details to enable examiners to evaluate the work. The important points should be highlighted in the body of the report, with details often referred to appendices.

1.1 PROJECT REPORT:

Title Page

Original Copy of the Approved Proforma of the Project Proposal

Certificate of Authenticated work

Role and Responsibility Form

Abstract

Acknowledgement

Table of Contents

Table of Figures

CHAPTER 1: INTRODUCTION

Background

Objectives

Purpose, Scope, and Applicability



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Purpose
Scope
Applicability
Achievements
Organisation of Report

CHAPTER 2: SURVEY OF TECHNOLOGIES

CHAPTER 3: REQUIREMENTS AND ANALYSIS

Problem Definition
Requirements Specification
Planning and Scheduling
Software and Hardware Requirements
Preliminary Product Description
Conceptual Models CHAPTER

4: SYSTEM DESIGN

Basic Modules
Data Design
Schema Design
Data Integrity and Constraints
Procedural Design
Logic Diagrams
Data Structures
Algorithms Design
User interface design
Security Issues
Test Cases Design

The documentation should use tools like star UML, Visuo for windows, Rational Rose for design as part of Software Project Management Practical Course. The documentation should be spiral bound for semester V and the entire documentation should be hard bound during semester VI.

CHAPTER 5: IMPLEMENTATION AND TESTING

Implementation Approaches



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Coding Details and Code Efficiency

Code Efficiency

Testing Approach

Unit Testing

Integrated Testing

Beta Testing

Modifications and Improvements

Test Cases

CHAPTER 6: RESULTS AND DISCUSSION

Test Reports

User Documentation

CHAPTER 7: CONCLUSIONS

Conclusion

Significance of the System

Limitations of the System

Future Scope of the Project

REFERENCES

GLOSSARY

APPENDIX A

APPENDIX B



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PROFORMA FOR THE APPROVAL PROJECT PROPOSAL

(Note: All entries of the proforma of approval should be filled up with appropriate and complete information. Incomplete proforma of approval in any respect will be summarily rejected.)

PNR No.:

Rollno: _____

1. Name of the Student

2. Title of the Project

3. Name of the Guide

4. Teaching experience of the Guide _____

5. Is this your first submission? Yes No

Signature of the Student

Signature of the Guide

Date:

Date:

Signature of the reordinator

Date:

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(All the text in the report should be in times new roman)

TITLE OF THE PROJECT
(NOT EXCEEDING 2 LINES, 24 BOLD,
ALL CAPS)

A Project Report (12 Bold)
Submitted in partial fulfillment of the
Requirements for the award of the Degree of (size-12)

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)(14 BOLD,
CAPS)

By(12 Bold)

Name of The Student (size-15, title case)
Seat Number (size-15)

Under the esteemed guidance of (13 bold)
Mr./Mrs. Name of The Guide (15 bold, title case)
Designation (14 Bold, title case)

COLLEGE LOGO

DEPARTMENT OF INFORMATION TECHNOLOGY(12 BOLD, CAPS)
COLLEGE NAME (14 BOLD, CAPS)
(Affiliated to University of Mumbai) (12, Title case, bold, italic)
CITY, PIN CODE(12 bold, CAPS)
MAHARASHTRA (12 bold, CAPS)
YEAR (12 bold)



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Mumbai Central, Mumbai - 400 008.

COLLEGE NAME (14 BOLD, CAPS)
(Affiliated to University of Mumbai) (13, bold, italic)
CITY-MAHARASHTRA-PINCODE(13 bold, CAPS)

DEPARTMENT OF INFORMATION TECHNOLOGY (14 BOLD, CAPS)

College Logo

CERTIFICATE (14 BOLD, CAPS, underlined, centered)

This is to certify that the project entitled, "**Title of The Project** ", is bonafied work of **NAME OF THE STUDENT** bearing Seat.No: (**NUMBER**) submitted in partial fulfillment of the requirements for the award of degree of BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY from University of Mumbai. (12, times new roman, justified)

Internal Guide (12 bold)

Coordinator

(Don't write names of lecturers or HOD)

External Examiner

Date:

College Seal



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(Project Abstract page format)

Abstract (20 bold, caps, centered)

Content (12, justified)

Note: Entire document should be with 1.5 line spacing and all paragraphs should start with 1 tab space.

ACKNOWLEDGEMENT (20, BOLD, ALL CAPS, CENTERED)

The acknowledgement should be in times new roman,12 font with 1.5 line spacing, justified.

DECLARATION (20 bold, centered, allcaps)

Content (12, justified)

I here by declare that the project entitled, “**Title of the Project**” done at **place where the project is done**, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university.

The project is done in partial fulfillment of the requirements for the award of degree of **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)** to be submitted as final semester project as part of our curriculum.

Name and Signature of the Student



TABLE OF CONTENTS (20bold, caps, centered)

Should be generated automatically using word processing software.

Chapter 1: Introduction	01(no bold)
Background	02(no bold)
Objectives
Purpose and Scope
Purpose
Scope	

Chapter 2: System Analysis	
Existing System	
Proposed System	
Requirement Analysis	
Hardware Requirements	
Software Requirements	
Justification of selection of Technology	

Chapter 3: System Design	
Module Division	
Data Dictionary	
ER Diagrams	
DFD/UML Diagrams	

Chapter 4: Implementation and Testing	
Code (Place Core segments)	
Testing Approach	
Unit Testing (Test cases and Test Results)	
Integration System (Test cases and Test Results)	

Chapter 5: Results and Discussions (Output Screens)

Chapter 6: Conclusion and Future Work

Chapter 7: References

List of Tables (20 bold, centered, Title Case)

Should be generated automatically using word processing software.

List of Figures (20 bold, centered, Title Case)

Should be generated automatically using word processing software.



(Project Introduction page format)

Chapter 1

Introduction (20 Bold, centered)

Content or text (12, justified)

Note: Introduction has to cover brief description of the project with minimum 4 pages.

Chapter 2

System Analysis (20 bold, Centered)

Subheadings are as shown below with following format (16 bold, CAPS)

2.1 Existing System (16 Bold)

2.1.1 ----- (14 bold, title case)

2.1.1.1 ----- (12 bold, title case)

Proposed System

Requirement Analysis

Hardware Requirements

Software Requirements

Justification of Platform – (how h/w & s/w satisfying the project)

Table 2.1: Caption

Chapter 3

System Design (20 bold, centered)

Subheadings are as shown below with following format (16 bold, CAPS)

Specify figures as Fig 11.1 – caption

Module Division

Data Dictionary

E-R Diagrams



Data Flow Diagrams / UML

Note: write brief description at the bottom of all diagrams

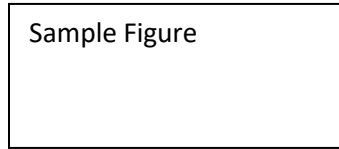


Fig. 3.1: Caption

Chapter 4

Implementation and Testing (20 bold, centered)

Code (Place Core segments)

Content includes description about coding phase in your project (Font-12)
(* don't include complete code ---- just description)

Testing Approach

Subheadings are as shown below with following format (16 bold, CAPS)

Unit Testing

Integration Testing

Note:

- Explain about above testing methods
- Explain how the above techniques are applied in your project
- Provide Test plans, test cases, etc relevant to your project

Chapter 5

Results and Discussions (20 bold, centered)

Note: Place Screen Shots and write the functionality of each screen at the bottom

Chapter 6

Conclusion and Future Work (20 bold, centered)

The conclusions can be summarized in a fairly short chapter around 300 words. Also include limitations of your system and future scope (12, justified)



Chapter 7

References (20 bold, centered)

Content (12, LEFT)

[1] Title of the book, Author

[2] Full URL of online references

[3]

*** NOTE ABOUT PROJECT VIVA VOCE:**

Student may be asked to write code for problem during VIVA to demonstrate his coding capabilities and he/she may be asked to write any segment of coding used in the in the project. The project can be done in group of at most four students. However, the length and depth of the project should be justified for the projects done in group. A big project can be modularised and different modules can be assigned as separate project to different students.

Marks Distribution:

Semester V: 50 Marks

Documentation: 50 marks

Semester VI: 150 Marks

Documentation: 50 Marks:

Implementation and Viva Voce: 100 Marks

The plagiarism should be maintained as per the UGC guidelines.



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Details of Practicals

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F.Y.B.Sc.(Information Technology) Semester wise Practical Syllabus w.e.f 2022-2023 onwards

PRACTICAL SYLLABUS SEMESTER-I

B. Sc (Information Technology)		Semester – I	
Course Name: Programming Principles with C Practical		Course Code: USIT1P1	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	a. Write an algorithm and draw flowchart for Area of circle. b. Write an algorithm and draw flowchart to print the given no. is even or odd. c. Write an algorithm and draw flowchart to print 1 to 10 numbers. d. Write an algorithm and draw flowchart for sum of 1 to 5 numbers. e. Write an algorithm and draw flowchart to compute the addition of digits of a given number.
2.	a. Write a program using while loop to reverse the digits of a number. b. Write a program to calculate the factorial of a given number. c. Write a program to find the roots of quadratic equation. d. Write a program to print the Fibonacci series.
3.	a. Write a program in C to check entered character vowel or consonant b. Write a program to C program to print day name of week using switch-case. c. Write a program to read three values from keyboard and print out the largest of them without using if statement.



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4.	<p>a. Write a program to print the pattern of asterisks as shown below :</p> <pre>* ** *** ****</pre> <p>b. Write a program to print the pattern of asterisks as shown below :</p> <pre>***** **** *** ** *</pre> <p>c. Write a program to print Floyd's Triangle.</p>
5.	<p>a. Write a program to print area of square using function.</p> <p>b. Write a program using recursive function.</p> <p>c. Write a program to square root, abs() value using function.</p> <p>d. Write a program using goto statement.</p>
6.	<p>a. Write a program to print rollno and names of 10 students using array.</p> <p>b. Write a program to read a matrix of size m*n.</p> <p>c. Write a program to sort the elements of array in ascending or descending order.</p>
7.	<p>a. Write a program to extract the portion of a character string and print the extracted part.</p> <p>b. Write a program to find the given string is palindrome or not.</p> <p>c. Write a program to using strlen(), strcmp() function.</p>
8.	<p>a. Write a program to display the values using different data types and its address using pointer.</p> <p>b. Write a program to perform addition and subtraction using pointer.</p>
9.	<p>a. Write a program to copy the contents of the file from one file into other.</p> <p>b. Write a program to print the structure using</p> <ul style="list-style-type: none">• Title• Author• Subject• Book ID <p>Print the details of two students.</p>
10.	<p>a. Create a mini project on "Bank management system" . The program should be menu driven.</p>

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B. Sc (Information Technology)		Semester – I	
Course Name: Digital Logic and Applications Practical		Course Code: USIT1P2	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Study of basic gates and Universal gates
a.	To verify the truth tables of OR, AND, NOR, NAND, EX-OR, EX-NOR gates
b.	To study IC 7400, 7402, 7404, 7408, 7432, 7486, 74266
c.	To implement and verify NAND and NOR as Universal gates
2.	Study of Boolean expressions
a.	To verify De Morgan's laws
b.	Implement the given expression using a minimum number of gates.
c.	Implement the given expression using a minimum number of ICs.
3.	Design of Combinational Circuits using K-maps
a.	Design and implement combinational circuits for the given problem/problems using minimization techniques of K-maps.
4.	Design and implement code converters
a.	Design the circuit and implement Binary to gray code converter
b.	Design the circuit and implement Gray to Binary code converter
c.	Design the circuit and implement Binary to BCD code converter
d.	Design the circuit and implement Binary to XS-3 code converter
5.	Implement Adder and Subtractor circuits
a.	Design the circuit and implement Half Adder and Full Adder
b.	Design the circuit and implement BCD Adder, XS-3 Adder, Binary Subtractor
6.	Design and implement Arithmetic circuits
a.	Design and implement 2-by-2 bit multiplier
7.	Implement Encoders and Decoders
a.	Design and implement 8: 3 encoder
b.	Design and implement 3:8 decoder
8.	Multiplexers and Demultiplexers

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a.	Design and Implement 4:1 multiplexer
b.	Design and Implement 1:4 demultiplexer
c.	Study IC 74151 8: 1 multiplexer and implement the expression
d.	Study IC 74138 3: 8 decoder and implement the expression
9.	Study of Flipflops and Counters
a.	Study of IC's 7473, 7474, and 7476
b.	Design a 3-bit ripple/ synchronous counter using IC 7473 and required gates
10.	Design of Shift Registers
a.	Design of Shift registers using IC 7474
b.	Implementation of digits using seven segment displays

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B. Sc (Information Technology)		Semester – I	
Course Name: Fundamentals of Database Management Systems Practical		Course Code: USIT1P3	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
Evaluation System	Practical Examination	Hours 2½	Marks 50
	Internal	--	--

List of Practical:	
1.	Draw E-R diagram and convert entities and relationships to relation table for a given scenario
a.	Bank
b.	College
2.	Write relational algebra queries for a given set of relations
3.	Defining data
a.	Using CREATE statement
b.	Using ALTER statement
c.	Using DROP statement
d.	Using TRUNCATE statement
e.	Using RENAME statement
4.	Manipulating data
a.	Using INSERT statement
b.	Using UPDATE statement
c.	Using DELETE statement
d.	Using SELECT statement
5.	Creating and managing the tables
a.	Creating table with constraints: NOTNULL, UNIQUE, PRIMARY KEY, FOREIGN KEY
6.	Restricting and sorting data
a.	Using DISTINCT, IN, AS, SORT, LIKE, ISNULL, OR
b.	Using Group By, Having clause, Order By clause
7.	Aggregate and Mathematical functions:
a.	AVG, MIN, MAX, SUM, COUNT
b.	ABS, SQRT, ROUND, TRUNCATE, SIGN, POWER, MOD, FLOOR, CEIL
8.	Views and Joins: For a given set of relation tables perform the following

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a.	Creating view
b.	Dropping view
c.	Selecting from a view
8.	Database trigger
a.	Using CREATE OR REPLACE TRIGGER
9.	Index
a.	Create index
b.	Drop index


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B. Sc (Information Technology)		Semester – I	
Course Name: Computational Logic and Discrete Structures Practical		Course Code: USIT1P4	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

1.	Set Theory
a.	Inclusion Exclusion principle.
b.	Power Sets
c.	Mathematical Induction
2.	Functions and Algorithms
a.	Recursively defined functions
b.	Cardinality
c.	Polynomial evaluation
d.	Greatest Common Divisor
3.	Probability Theory 1
a.	Sample space and events
b.	Finite probability spaces
c.	Equiprobable spaces
d.	Addition Principle
4.	Probability Theory 2
a.	Conditional Probability
b.	Multiplication theorem for conditional probability
c.	Independent events
d.	Repeated trials with two outcomes
5.	Counting 1
a.	Sum rule principle
b.	Product rule principle
c.	Factorial
d.	Binomial coefficients
6.	Counting 2
a.	Permutations

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b.	Permutations with repetitions
c.	Combinations
d.	Combinations with repetitions
7.	Counting 3
a.	Ordered partitions
b.	Unordered partitions
8.	Graph Theory
a.	Paths and connectivity
b.	Minimum spanning tree
c.	Isomorphism
9.	Directed Graphs
a.	Adjacency matrix
b.	Path matrix
10	Recurrence relations
a.	Linear homogeneous recurrence relations with constant coefficients
b.	Solving linear homogeneous recurrence relations with constant coefficients
c.	Solving general homogeneous linear recurrence relations

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B. Sc (Information Technology)		Semester – I	
Course Name: Technical Communication Skills Practical		Course Code: USIT1P5	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Use of word processing tools for communication.
a.	Use of various tools like spell checker, header, footer etc.
b.	Make formal and informal letters, creating resume.
c.	Designing brochures and flyers using templates in word.
2.	Writing reports, minutes of meeting, action plan.
3.	Use of spreadsheet for data interpretation and data analysis.
4.	Basic use of what if analysis using excel.
5.	Visual Representation of data using excel – pie chart ,line chart, bar chart etc.
6.	Summarization of data using of pivot tables and chart in excel.
7.	Use of presentation tools like PowerPoint for communication and presentation skills.
8.a.	Basic communication covering the following topics:- Meeting people, Asking Questions and Design of questionnaire.
8.b.	Using netiquettes in online mode of communication using Zoom / Google Meet / MS-Teams etc.
9.	Use of Mail etiquette for writing effective mails.
10.a.	Use of Mail merge and its features.
10.b.	Creating profile using LinkedIn.


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PRACTICAL SYLLABUS SEMESTER-II

B. Sc (Information Technology)		Semester – II	
Course Name: Object Oriented Programming with C++ Practical		Course Code: USIT2P1	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:

1. a.	Write a C++ program to create a simple calculator.
b.	Write a C++ program to convert seconds into hours, minutes and seconds.
c.	Write a C++ program to find the volume of a square, cone, and rectangle.
2. a.	Write a C++ program to find the greatest of three numbers.
b.	Write a C++ program to find the sum of even and odd n natural numbers
c.	Write a C++ program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
3. a.	Write a C++ program using classes and object Student to print name of the student, roll no, Display the same.
b.	Write a C++ program for Structure bank employee to print name of the employee, account_no. & balance. Display the same also display the balance after withdraw and deposit
c.	Write a C++ Program to design a class having static member function named showcount() which has the property of displaying the number of objects created of the class.
d.	Write a Program to find Maximum out of Two Numbers using friend function. Note: Here one number is a member of one class and the other number is member of some other class.
e.	Write a C++ Program using copy constructor to copy data of an object to another object.
f.	Write a C++ Program to allocate memory dynamically for an object of a given class using class's constructor.
4. a.	Write a C++ program to design a class representing complex numbers and having the functionality of performing addition & multiplication of two complex numbers using operator overloading.
b.	Write a C++ program to overload new/delete operators in a class.

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c.	Write a C++ program to access members of a STUDENT class using pointer to object members
	Write a C++ Program to generate Fibonacci Series by using Constructor to initialize the Data Members.
d.	Write a C++ Program to generate Fibonacci Series by using Constructor to initialize the Data Members.
e.	Write a C++ Program that illustrate single inheritance.
f.	Write a C++ Program that illustrate multiple inheritance.
g.	Write a C++ Program that illustrate multi level inheritance.
h.	Write a C++ Program that illustrate Hierarchical inheritance.
i.	Write a C++ Program illustrating how the constructors are implemented and the order in which they are called when the classes are inherited. Use three classes named alpha, beta, gamma such that alpha, beta are base class and gamma is derived class inheriting alpha & beta
5. a.	Write a C++ Program to design a student class representing student roll no. and a test class (derived class of student) representing the scores of the student in various subjects and sports class representing the score in sports. The sports and test class should be inherited by a result class having the functionality to add the scores and display the final result for a student.
6. a.	Write a C++ program to maintain the records of person with details (Name and Age) and find the eldest among them. The program must use this pointer to return the result.
7. a.	Write a C++ program illustrating the use of virtual functions in class.
b.	Write a C++ program to design a class representing the information regarding digital library (books, tape: book & tape should be separate classes having the base class as media). The class should have the functionality for adding new item, issuing, deposit etc. the program should use the runtime polymorphism.
8. a.	Write a C++ program to show conversion from string to int and vice-versa.
b.	Write a C++ program implementing basic operation of class ios i.e. setf, unsetf, precision etc.
c.	Write a C++ program to implement I/O operations on characters. I/O operations includes inputting a string, Calculating length of the string, Storing the String in a file, fetching the stored characters from it, etc.
d.	Write a C++ program to copy the contents of one file to another.
e.	Write a C++ program to perform read/write binary I/O operation on a file (i.e. write the object of a structure/class to file).
9. a.	Write a C++ program to implement the exception handling with multiple catch statements.
b.	Write a C++ program to implement the exception handling with rethrowing in Exception.



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10. a.	Write a C++ Program to create Simple calculator using Class template.
b.	Write a C++ Program to get maximum of two number using Class template.

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c.	Write a set of instructions to alter the contents of flag register in 8085.
d.	Write a program to count number of I's in the contents of D register and store the count in the B register.
5.	Multiple memory locations.
a.	Calculate the sum of series of numbers. The length of the series is in memory location 4200H and the series begins from memory location 4201H. a. Consider the sum to be 8 bit number. So, ignore carries. Store the sum at memory location 4300H. b. Consider the sum to be 16 bit number. Store the sum at memory locations 4300H and 4301H
b.	Multiply two 8-bit numbers stored in memory locations 2200H and 2201H by repetitive addition and store the result in memory locations 2300H and 2301H.
c.	Divide 16 bit number stored in memory locations 2200H and 2201H by the 8 bit number stored at memory location 2202H. Store the quotient in memory locations 2300H and 2301H and remainder in memory locations 2302H and 2303H.
6.	Calculations with respect to memory locations.
a.	Write a program to sort given 10 numbers from memory location 2200H in the ascending order.
b.	Calculate the sum of series of even numbers from the list of numbers. The length of the list is in memory location 2200H and the series itself begins from memory location 2201H. Assume the sum to be 8 bit number so you can ignore carries and store the sum at memory location 2S Sample problem:
7.	Assembly programs on memory locations
a.	A list of 50 numbers is stored in memory, starting at 6000H. Find number of negative, zero and positive numbers from this list and store these results in memory locations 7000H, 7001H, and 7002H respectively
b.	Write an assembly language program to generate fibonacci number.
c.	Program to calculate the factorial of a number between 0 to 8.
8.	Design and develop a reprogrammable embedded computer using 8051 microcontrollers and to show the following aspects. a. Programming b. Execution c. Debugging
9 a	Configure timer control registers of 8051 and develop a program to generate given time delay.
b	Port I / O: Use one of the four ports of 8051 for O/P interfaced to eight LED's. Simulate binary counter (8 bit) on LED's
c	To interface 8 LEDs at Input-output port and create different patterns.



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B. Sc.(Information Technology)		Semester – II	
Course Name: Fundamentals of Micro Processor and Microcontrollers Practical		Course Code: USIT2P2	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Perform the following Operations related to memory locations.
a.	Store the data byte 32H into memory location 4000H.
b.	Exchange the contents of memory locations 2000H and 4000H
2.	Simple assembly language programs.
a.	Subtract two 8-bit numbers.
b.	Subtract the 16-bit number in memory locations 4002H and 4003H from the 16-bit number in memory locations 4000H and 4001H. The most significant eight bits of the two numbers are in memory locations 4001H and 4003H. Store the result in memory locations 4004H and 4005H with the most significant byte in memory location 4005H.
c.	Find the 1's complement of the number stored at memory location 4400H and store the complemented number at memory location 4300H.
d.	Find the 2's complement of the number stored at memory location 4200H and store the complemented number at memory location 4300H.
3.	Packing and unpacking operations.
a.	Pack the two unpacked BCD numbers stored in memory locations 4200H and 4201H and store result in memory location 4300H. Assume the least significant digit is stored at 4200H.
b.	Two digit BCD number is stored in memory location 4200H. Unpack the BCD number and store the two digits in memory locations 4300H and 4301H such that memory location 4300H will have lower BCD digit.
4.	Register Operations.
a.	Write a program to shift an eight bit data four bits right. Assume that data is in register C.
b.	Program to shift a 16-bit data 1 bit left. Assume data is in the HL register pair

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d	To demonstrate timer working in timer mode and blink LED without using any loop delay routine.
10.	Using FlashMagic
a.	To demonstrate the procedure for flash programming for reprogrammable embedded system board using Flash Magic
b.	To demonstrate the procedure and connections for multiple controllers programming of same type of controller with same source code in one go, using flash magic.

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B. Sc (Information Technology)		Semester – II	
Course Name: Web Application Development Practical		Course Code: USIT2P3	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1. Use of Basic Tags	
a.	Design a web page using different text formatting tags.
b.	Design a web page with links to different pages and allow navigation between web pages.\
c.	Design a web page that automatically redirects the user to another page.
2. Use of CSS	
a.	Design a web page demonstrating different stylesheet types.
b.	Design a web page demonstrating grouping selectors.
3. Layout and Media	
a.	Design a web page demonstrating different semantics.
b.	Design a web page embedding image, audio and video.
c.	Design a web page with Imagemaps.
4. Tables and Forms	
a.	Design a web page with different tables.
b.	Design a web page with a form that uses all types of controls.
5. JavaScript	
a.	Using JavaScript, design a web page to accept a number from the user and print its Factorial.
b.	Using JavaScript, a web page that prints Fibonacci series/any given series.
c.	Write a JavaScript program to display all the prime numbers between 1 and 100.
d.	Write a JavaScript program to accept a number from the user and display the sum of its digits.
6. JavaScript Objects	
a.	Using JavaScript, design a web page demonstrating different native objects of JavaScript.
b.	Write a program in JavaScript to accept a sentence from the user and display the number of words in it. (Do not use split () function).
7. JavaScript Events	
a.	Write a JavaScript program to design simple calculator.

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b.	Design a form and validate all the controls placed on the form using JavaScript.
8.	Basic PHP
a.	Write a PHP code to find the greater of 2 numbers. Accept the no. from the user.
b.	Write a PHP Program to accept a number from the user and print it factorial.
c.	Write a PHP program to accept a number from the user and print whether it is prime or not.
d.	Write a PHP program to display the following Binary Pyramid: 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1
e.	Write a PHP program to demonstrate different string functions.
f.	Write a PHP program to demonstrate different array functions.
9.	Advanced PHP
a.	Write a PHP program to demonstrate use of sessions and cookies.
b.	Write a PHP program to demonstrate use of filters.
10.	PHP and MySQL
a.	Write a PHP program to create: Create a database College Create a table Department (Dname, Dno, Number_of_faculty)
b.	Write a PHP program to create a database named "College". Create a table named "Student" with following fields (sno, sname, percentage). Insert 3 records of your choice. Display the names of the students whose percentage is between 35 to 75 in a tabular format.
c.	Write a PHP program to Update rows in a table Delete rows from a table
d.	Design a PHP page for authenticating a user


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B. Sc (Information Technology)		Semester – I	
Course Name: Numerical Methods Practical		Course Code: USIT2P4	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:

To be implemented using SCILAB

1.	Iterative Calculation
a.	Program for iterative calculation
b.	Program to calculate the roots of a quadratic equation using the formula
c.	Program to evaluate e^x using infinite series
2.	Solution of algebraic and transcendental equations:
a.	Program to solve algebraic and transcendental equation by bisection method.
b.	Program to solve algebraic and transcendental equation by false position method.
c.	Program to solve algebraic and transcendental equation by Secant method.
d.	Program to solve algebraic and transcendental equation by Newton Raphson method.
3.	Interpolation
a.	Program for Newton's forward interpolation.
b.	Program for Newton's backward interpolation.
c.	Program for Lagrange's interpolation.
4.	Solving linear system of equations by iterative methods
a.	Program for solving linear system of equations using Gauss Jordan method.
b.	Program for solving linear system of equations using Gauss Seidel method.
5.	Numerical Differentiation
a.	Program to obtain derivatives numerically.
6.	Numerical Integration
a.	Program for numerical integration using Trapezoidal rule.
b.	Program for numerical integration using Simpson's 1/3 rd rule.
c.	Program for numerical integration using Simpson's 3/8 th rule.
7.	Solution of differential equations
a.	Program to solve differential equation using Euler's method.
b.	Program to solve differential equation using modified Euler's method.
c.	Program to solve differential equation using Runge-kutta 2 nd order and 4 th order methods.

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8.	Regression 1
a.	Program for Linear regression.
b.	Program for Polynomial Regression.
9.	Regression 2
a.	Program for multiple linear regression.
b.	Program for non-linear regression.
10.	Numerical solution of partial differential equations
a.	Program to find solution of Laplace's equation.

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B. Sc (Information Technology)		Semester – II	
Course Name: Practical's in PL/SQL		Course Code: USIT2P5	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	PL/SQL Basics
a.	Use of variables.
b.	Write executable statement.
c.	Interacting with Oracle Server.
d.	Create anonymous PL/SQL block
2.	Control Structure in PL/SQL .
a.	Using while loop
b.	Do loop
c.	For loop
d.	Use of GOTO statement
3.	Create conditional statement using PL/SQL
a.	Using if statement
b.	Using if else statement
c.	Using elsif ladder
d.	Using case expression.
4.	Creation of Sequence in PL/SQL
5.	Create cursor in PL/SQL
a.	Implicit cursor
b.	Explicit
c.	Parameterized cursor
d.	Cursor for loop
6.	Creation of Procedures in PL/SQL
7.	Functions in PL/SQL
a.	Compute and returns the maximum value
b.	Compute factorial of given number.

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8.	Creation of Trigger
a.	Create Row level trigger
b.	Create Statement level trigger
c.	Create instead of trigger
9.	Handling exceptions
a.	Creation of user defined exception
b.	Creation of system defined exception.
10.	Creation of Package in PL/SQL



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S.Y.B.Sc.(Information Technology) Semester wise Practical Syllabus w.e.f 2017-2018 onwards

PRACTICAL SYLLABUS SEMESTER-III

B. Sc. (Information Technology)		Semester – III	
Course Name: Python Programming Practical		Course Code: USIT3P1	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Write the program for the following:
a.	Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.
b.	Enter the number from the user and depending on whether the number is even or odd, print out an appropriate message to the user.
c.	Write a program to generate the Fibonacci series.
d.	Write a function that reverses the user defined value.
e.	Write a function to check the input value is Armstrong and also write the function for Palindrome.
f.	Write a recursive function to print the factorial for a given number.
2.	Write the program for the following:
a.	Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.
b.	Define a function that computes the <i>length</i> of a given list or string.
c.	Define a <i>procedure</i> histogram() that takes a list of integers and prints a histogram to the screen. For example, histogram([4, 9, 7]) should print the following: **** ***** *****
3.	Write the program for the following:
a.	A <i>pangram</i> is a sentence that contains all the letters of the English alphabet at least once, for example: <i>The quick brown fox jumps over the lazy dog</i> . Your task here

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	is to write a function to check a sentence to see if it is a pangram or not.
b.	Take a list, say for example this one: a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89] and write a program that prints out all the elements of the list that are less than 5.
4.	Write the program for the following:
a.	Write a program that takes two lists and returns True if they have at least one common member.
b.	Write a Python program to print a specified list after removing the 0th, 2nd, 4th and 5th elements.
c.	Write a Python program to clone or copy a list
5.	Write the program for the following:
a.	Write a Python script to sort (ascending and descending) a dictionary by value.
b.	Write a Python script to concatenate following dictionaries to create a new one. Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
c.	Write a Python program to sum all the items in a dictionary.
6.	Write the program for the following:
a.	Write a Python program to read an entire text file.
b.	Write a Python program to append text to a file and display the text.
c.	Write a Python program to read last n lines of a file.
7.	Write the program for the following:
a.	Design a class that store the information of student and display the same
b.	Implement the concept of inheritance using python
c.	Create a class called <code>Numbers</code> , which has a single class attribute called <code>MULTIPLIER</code> , and a constructor which takes the parameters <code>x</code> and <code>y</code> (these should all be numbers). i. Write a method called <code>add</code> which returns the sum of the attributes <code>x</code> and <code>y</code> . ii. Write a class method called <code>multiply</code> , which takes a single number parameter <code>a</code> and returns the product of <code>a</code> and <code>MULTIPLIER</code> . iii. Write a static method called <code>subtract</code> , which takes two number parameters, <code>band c</code> , and returns <code>b - c</code> . iv. Write a method called <code>value</code> which returns a tuple containing the values of <code>x</code> and <code>y</code> . Make this method into a property, and write a setter and a deleter for manipulating the values of <code>x</code> and <code>y</code> .
8.	Write the program for the following:
a.	Open a new file in IDLE ("New Window" in the "File" menu) and save it as <code>geometry.py</code> in



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	<p>the directory where you keep the files you create for this course. Then copy the functions you wrote for calculating volumes and areas in the "Control Flow and Functions" exercise into this file and save it.</p> <p>Now open a new file and save it in the same directory. You should now be able to import your own module like this:</p> <pre>import geometry</pre> <p>Try and add <code>print dir(geometry)</code> to the file and run it.</p> <p>Now write a function <code>pointyShapeVolume(x, y, squareBase)</code> that calculates the volume of a square pyramid if <code>squareBase</code> is True and of a right circular cone if <code>squareBase</code> is False. <code>x</code> is the length of an edge on a square if <code>squareBase</code> is True and the radius of a circle when <code>squareBase</code> is False. <code>y</code> is the height of the object. First use <code>squareBase</code> to distinguish the cases. Use the <code>circleArea</code> and <code>squareArea</code> from the <code>geometry</code> module to calculate the base areas.</p>
b.	Write a program to implement exception handling.
9.	Write the program for the following:
a.	Try to configure the widget with various options like: <code>bg="red"</code> , <code>family="times"</code> , <code>size=18</code>
b.	Try to change the widget type and configuration options to experiment with other widget types like Message, Button, Entry, Checkbutton, Radiobutton, Scale etc.
10.	Design the database applications for the following:
a.	Design a simple database application that stores the records and retrieve the same.
b.	Design a database application to search the specified record from the database.
c.	Design a database application to that allows the user to add, delete and modify the records.



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B. Sc. (Information Technology)		Semester – III	
Course Name: Data Structures Practical		Course Code: USIT3P2	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Implement the following:
a.	Write a program to store the elements in 1-D array and perform the operations like searching, sorting and reversing the elements. [Menu Driven]
b.	Read the two arrays from the user and merge them and display the elements in sorted order. [Menu Driven]
c.	Write a program to perform the Matrix addition, Multiplication and Transpose Operation. [Menu Driven]
2.	Implement the following for Linked List:
a.	Write a program to create a single linked list and display the node elements in reverse order.
b.	Write a program to search the elements in the linked list and display the same
c.	Write a program to create double linked list and sort the elements in the linked list.
3.	Implement the following for Stack:
a.	Write a program to implement the concept of Stack with Push, Pop, Display and Exit operations.
b.	Write a program to convert an infix expression to postfix and prefix conversion.
c.	Write a program to implement Tower of Hanoi problem.
4.	Implement the following for Queue:
a.	Write a program to implement the concept of Queue with Insert, Delete, Display and Exit operations.
b.	Write a program to implement the concept of Circular Queue
c.	Write a program to implement the concept of Deque.
5.	Implement the following sorting techniques:
a.	Write a program to implement bubble sort.
b.	Write a program to implement selection sort.
c.	Write a program to implement insertion sort.
a.	Write a program to implement merge sort.
b.	Write a program to search the element using sequential search.

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c.	Write a program to search the element using binary search.
7.	Implement the following data structure techniques:
a.	Write a program to create the tree and display the elements.
b.	Write a program to construct the binary tree.
c.	Write a program for inorder, postorder and preorder traversal of tree
8.	Implement the following data structure techniques:
a.	Write a program to insert the element into maximum heap.
b.	Write a program to insert the element into minimum heap.
9.	Implement the following data structure techniques:
a.	Write a program to implement the collision technique.
b.	Write a program to implement the concept of linear probing.
10.	Implement the following data structure techniques:
a.	Write a program to generate the adjacency matrix.
b.	Write a program for shortest path diagram.

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B. Sc. (Information Technology)		Semester – III	
Course Name: Computer Networks		Course Code: USIT3P3	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical	
1.	<p>IPv4 Addressing and Subnetting</p> <p>a) Given an IP address and network mask, determine other information about the IP address such as:</p> <ul style="list-style-type: none"> • Network address • Network broadcast address • Total number of host bits • Number of hosts <p>b) Given an IP address and network mask, determine other information about the IP address such as:</p> <ul style="list-style-type: none"> • The subnet address of this subnet • The broadcast address of this subnet • The range of host addresses for this subnet • The maximum number of subnets for this subnet mask • The number of hosts for each subnet • The number of subnet bits • The number of this subnet
2.	Use of ping and tracert / traceroute, ipconfig / ifconfig, route and arp utilities.
3.	Configure IP static routing.
4.	Configure IP routing using RIP.
5.	Configuring Simple OSPF.
6.	Configuring DHCP server and client.
7.	Create virtual PC based network using virtualization software and virtual NIC.
8.	Configuring DNS Server and client.
9.	Configuring OSPF with multiple areas.



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10.	Use of Wireshark to scan and check the packet information of following protocols <ul style="list-style-type: none">• HTTP• ICMP• TCP• SMTP• POP3
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B. Sc. (Information Technology)		Semester – III	
Course Name: Database Management System		Course Code: USIT3P4	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:

1.	SQL Statements – 1
a.	Writing Basic SQL SELECT Statements
b.	Restricting and Sorting Data
c.	Single-Row Functions
2.	SQL Statements – 2
a.	Displaying Data from Multiple Tables
b.	Aggregating Data Using Group Functions
c.	Subqueries
3.	Manipulating Data
a.	Using INSERT statement
b.	Using DELETE statement
c.	Using UPDATE statement
4.	Creating and Managing Tables
a.	Creating and Managing Tables
b.	Including Constraints
5.	Creating and Managing other database objects
a.	Creating Views
b.	Other Database Objects
c.	Controlling User Access
6.	Using SET operators, Date/Time Functions, GROUP BY clause (advanced features) and advanced subqueries
a.	Using SET Operators
b.	Datetime Functions
c.	Enhancements to the GROUP BY Clause
d.	Advanced Subqueries
7.	PL/SQL Basics
a.	Declaring Variables
b.	Writing Executable Statements
c.	Interacting with the Oracle Server
d.	Writing Control Structures

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8.	Composite data types, cursors and exceptions.
a.	Working with Composite Data Types
b.	Writing Explicit Cursors
c.	Handling Exceptions
9.	Procedures and Functions
a.	Creating Procedures
b.	Creating Functions
c.	Managing Subprograms
d.	Creating Packages

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B. Sc. (Information Technology)		Semester – III	
Course Name: Mobile Programming		Course Code: USIT3P5	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
	Setting up CORDOVA, PhoneGAP Project and environment.
1.	<ul style="list-style-type: none"> • Creating and building simple “Hello World” App using Cordova • Adding and Using Buttons • Adding and Using Event Listeners
2.	<ul style="list-style-type: none"> • Creating and Using Functions • Using Events • Handling and Using Back Button
3.	<ul style="list-style-type: none"> • Installing and Using Plugins • Installing and Using Battery Plugin • Installing and Using Camera Plugin
4.	<ul style="list-style-type: none"> • Installing and Using Contacts Plugin • Installing and Using Device Plugin • Installing and Using Accelerometer Plugin
5.	<ul style="list-style-type: none"> • Installing and Using Device Orientation plugin • Installing and Using Device Orientation plugin • Creating and Using Prompt Function
6.	<ul style="list-style-type: none"> • Installing and Using File Plugin • Installing and Using File Transfer Plugin • Using Download and Upload functions
7.	<ul style="list-style-type: none"> • Installing and Using Globalization Plugin • Installing and Using Media Plugin • Installing and Using Media Capture Plugin
8.	<ul style="list-style-type: none"> • Installing and Using Network Information Plugin • Installing and Using Splash Screen Plugin • Installing and Using Vibration Plugin

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9.	<ul style="list-style-type: none">• Developing Single Page Apps• Developing Multipage Apps• Storing Data Locally in a Cordova App
10.	<ul style="list-style-type: none">• Use of sqlite plugin with PhoneGap / apache Cordova• Using Sqlite read/write and search• Populating Cordova SQLite storage with the JQuery API

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PRACTICAL SYLLABUS SEMESTER-IV

B. Sc. (Information Technology)		Semester –IV	
Course Name: Core Java Practical		Course Code: USIT4P1	
Periods per week 1 Period is 50 minutes	Lectures per week	3	
		Hours	Marks
Evaluation System	Practical Examination	2½	50

List of Practical:	
1. Java Basics	
a.	Write a Java program that takes a number as input and prints its multiplication table upto 10.
b.	Write a Java program to display the following pattern. ***** **** *** ** *
c.	Write a Java program to print the area and perimeter of a circle.
2. Use of Operators	
a.	Write a Java program to add two binary numbers.
b.	Write a Java program to convert a decimal number to binary number and vice versa.
c.	Write a Java program to reverse a string.
3. Java Data Types	
a.	Write a Java program to count the letters, spaces, numbers and other characters of an input string.
b.	Implement a Java function that calculates the sum of digits for a given char array consisting of the digits '0' to '9'. The function should return the digit sum as a long value.
c.	Find the smallest and largest element from the array
4. Methods and Constructors	
a.	Designed a class SortData that contains the method asc() and desc().
b.	Designed a class that demonstrates the use of constructor and destructor.
c.	Write a java program to demonstrate the implementation of abstract class.
5. Inheritance	
a.	Write a java program to implement single level inheritance.
b.	Write a java program to implement method overriding
c.	Write a java program to implement multiple inheritance.

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6.	Packages and Arrays
a.	Create a package, Add the necessary classes and import the package in java class.
b.	Write a java program to add two matrices and print the resultant matrix.
c.	Write a java program for multiplying two matrices and print the product for the same.
7.	Vectors and Multithreading
a.	Write a java program to implement the vectors.
b.	Write a java program to implement thread life cycle.
c.	Write a java program to implement multithreading.
8.	File Handling
b.	Write a java program to copy the contents from one file to other file.
c.	Write a java program to read the student data from user and store it in the file.
9.	GUI and Exception Handling
a.	Design a AWT program to print the factorial for an input value.
b.	Design an AWT program to perform various string operations like reverse string, string concatenation etc.
c.	Write a java program to implement exception handling.
10.	GUI Programming.
a.	Design an AWT application that contains the interface to add student information and display the same.
b.	Design a calculator based on AWT application.
c.	Design an AWT application to generate result marks sheet.



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B. Sc. (Information Technology)		Semester – IV	
Course Name: Introduction to Embedded Systems Practical		Course Code: USIT4P2	
Periods per week 1 Period is 50 minutes	Lectures per week	3	
		Hours	Marks
Evaluation System	Practical Examination	2½	50

List of Practical:	
1.	Design and develop a reprogrammable embedded computer using 8051 microcontrollers and to show the following aspects. a. Programming b. Execution c. Debugging
2.a.	Configure timer control registers of 8051 and develop a program to generate given time delay.
b.	To demonstrate use of general purpose port i.e. Input/ output port of two controllers for data transfer between them.
3.a.	Port I / O: Use one of the four ports of 8051 for O/P interfaced to eight LED's. Simulate binary counter (8 bit) on LED's
b.	To interface 8 LEDs at Input-output port and create different patterns.
c.	To demonstrate timer working in timer mode and blink LED without using any loop delay routine.
4.a.	Serial I / O: Configure 8051 serial port for asynchronous serial communication with serial port of PC exchange text messages to PC and display on PC screen. Signify end of message by carriage return.
b.	To demonstrate interfacing of seven-segment LED display and generate counting from 0 to 99 with fixed time delay.
c.	Interface 8051 with D/A converter and generate square wave of given frequency on oscilloscope.
5.a.	Interface 8051 with D/A converter and generate triangular wave of given frequency on oscilloscope.
b.	Using D/A converter generate sine wave on oscilloscope with the help of lookuptable stored in data area of 8051.
6.	Interface stepper motor with 8051 and write a program to move the motor through a given angle in clock wise or counter clock wise direction.
7.	Generate traffic signal.
8.	Implement Temperature controller.

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9.	Implement Elevator control.
10.	Using FlashMagic
a.	To demonstrate the procedure for flash programming for reprogrammable embedded system board using FlashMagic
b.	To demonstrate the procedure and connections for multiple controllers programming of same type of controller with same source code in one go, using flash magic.

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B. Sc. (Information Technology)		Semester – IV	
Course Name: Computer Oriented Statistical Techniques Practical		Course Code: USIT4P3	
Periods per week 1 Period is 50 minutes	Lectures per week	3	
Evaluation System	Practical Examination	Hours	Marks
		2½	50

List of Practical	
1.	Using R execute the basic commands, array, list and frames.
2.	Create a Matrix using R and Perform the operations addition, inverse, transpose and multiplication operations.
3.	Using R Execute the statistical functions: mean, median, mode, quartiles, range, inter quartile range histogram
4.	Using R import the data from Excel / .CSV file and Perform the above functions.
5.	Using R import the data from Excel / .CSV file and Calculate the standard deviation, variance, co-variance.
6.	Using R import the data from Excel / .CSV file and draw the skewness.
7.	Import the data from Excel / .CSV and perform the hypothetical testing.
8.	Import the data from Excel / .CSV and perform the Chi-squared Test.
9.	Using R perform the binomial and normal distribution on the data.
10.	Perform the Linear Regression using R.
11.	Compute the Least squares means using R.
12.	Compute the Linear Least Square Regression

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B. Sc. (Information Technology)		Semester – IV	
Course Name: Software Engineering		Course Code: USIT4P4	
Periods per week 1 Period is 50 minutes	Lectures per week	3	
Evaluation System	Practical Examination	Hours	Marks
		2½	50

List of Practical (To be executed using Star UML or any similar software)	
1.	Study and implementation of class diagrams.
2.	Study and implementation of Use Case Diagrams.
3.	Study and implementation of Entity Relationship Diagrams.
4.	Study and implementation of Sequence Diagrams.
5.	Study and implementation of State Transition Diagrams.
6.	Study and implementation of Data Flow Diagrams.
7.	Study and implementation of Collaboration Diagrams.
8.	Study and implementation of Activity Diagrams.
9.	Study and implementation of Component Diagrams.
10.	Study and implementation of Deployment Diagrams.

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B. Sc. (Information Technology)		Semester – IV	
Course Name: Computer Graphics and Animation		Course Code: USIT4P5	
Periods per week 1 Period is 50 minutes	Lectures per week	3	
		Hours	Marks
Evaluation System	Practical Examination	2½	50

List of Practical:	
1. Solve the following:	
a.	Study and enlist the basic functions used for graphics in C / C++ / Python language. Give an example for each of them.
b.	Draw a co-ordinate axis at the center of the screen.
2. Solve the following:	
a.	Divide your screen into four region, draw circle, rectangle, ellipse and half ellipse in each region with appropriate message.
b.	Draw a simple hut on the screen.
3. Draw the following basic shapes in the center of the screen :	
	i. Circle ii. Rectangle iii. Square iv. Concentric Circles v. Ellipse vi. Line
4. Solve the following:	
a.	Develop the program for DDA Line drawing algorithm.
b.	Develop the program for Bresenham's Line drawing algorithm.
5. Solve the following:	
a.	Develop the program for the mid-point circle drawing algorithm.
b.	Develop the program for the mid-point ellipse drawing algorithm.
6. Solve the following:	
a.	Write a program to implement 2D scaling.
b.	Write a program to perform 2D translation
7. Solve the following:	
a.	Perform 2D Rotation on a given object.
b.	Program to create a house like figure and perform the following operations. i. Scaling about the origin followed by translation. ii. Scaling with reference to an arbitrary point. iii. Reflect about the line $y = mx + c$.
8. Solve the following:	
a.	Write a program to implement Cohen-Sutherland clipping.
b.	Write a program to implement Liang - Barsky Line Clipping Algorithm
9. Solve the following:	
a.	Write a program to fill a circle using Flood Fill Algorithm.



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b.	Write a program to fill a circle using Boundary Fill Algorithm.
10.	Solve the following:
a.	Develop a simple text screen saver using graphics functions.
b.	Perform smiling face animation using graphic functions.
c.	Draw the moving car on the screen.

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T.Y.B.Sc.(Information Technology) Semester wise Practical Syllabus w.e.f 2018-2019 onwards

PRACTICAL SYLLABUS SEMESTER-V

B. Sc. (Information Technology)		Semester – V	
Course Name: Project Dissertation		Course Code: USIT5P1	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

B. Sc. (Information Technology)		Semester – V	
Course Name: Internet of Things Practical		Course Code: USIT5P2	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
0	Starting Raspbian OS, Familiarising with Raspberry Pi Components and Interface, Connecting to ethernet, Monitor, USB.
1	Displaying different LED patterns with Raspberry Pi.
2	Displaying Time over 4-Digit 7-Segment Display using Raspberry Pi
3	Raspberry Pi Based Oscilloscope
4	Controlling Raspberry Pi with WhatsApp.
5	Setting up Wireless Access Point using Raspberry Pi
6	Fingerprint Sensor interfacing with Raspberry Pi
7	Raspberry Pi GPS Module Interfacing
8	IoT based Web Controlled Home Automation using Raspberry Pi
9	Visitor Monitoring with Raspberry Pi and Pi Camera
10	Interfacing Raspberry Pi with RFID.
11	Building Google Assistant with Raspberry Pi.
12	Installing Windows 10 IoT Core on Raspberry Pi

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B. Sc. (Information Technology)		Semester – V	
Course Name: Advanced Web Programming Practical		Course Code: USIT5P3	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
1.	Working with basic C# and ASP .NET
a.	Create an application that obtains four int values from the user and displays the product.
b.	Create an application to demonstrate string operations.
c.	Create an application that receives the (Student Id, Student Name, Course Name, Date of Birth) information from a set of students. The application should also display the information of all the students once the data entered.
d.	Create an application to demonstrate following operations i. Generate Fibonacci series. ii. Test for prime numbers. iii. Test for vowels. iv. Use of foreach loop with arrays v. Reverse a number and find sum of digits of a number.
2.	Working with Object Oriented C# and ASP .NET
a.	Create simple application to perform following operations i. Finding factorial Value ii. Money Conversion iii. Quadratic Equation iv. Temperature Conversion
b.	Create simple application to demonstrate use of following concepts i. Function Overloading ii. Inheritance (all types) iii. Constructor overloading iv. Interfaces
c.	Create simple application to demonstrate use of following concepts i. Using Delegates and events ii. Exception handling
3.	Working with Web Forms and Controls
a.	Create a simple web page with various sever controls to demonstrate setting and use of their properties. (Example : AutoPostBack)

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b.	Demonstrate the use of Calendar control to perform following operations. a) Display messages in a calendar control b) Display vacation in a calendar control c) Selected day in a calendar control using style d) Difference between two calendar dates
c.	Demonstrate the use of Treeview control perform following operations. a) Treeview control and datalist b) Treeview operations
4.	Working with Form Controls
a.	Create a Registration form to demonstrate use of various Validation controls.
b.	Create Web Form to demonstrate use of Adrotator Control.
c.	Create Web Form to demonstrate use User Controls.
5.	Working with Navigation, Beautification and Master page.
a.	Create Web Form to demonstrate use of Website Navigation controls and Site Map.
b.	Create a web application to demonstrate use of Master Page with applying Styles and Themes for page beautification.
c.	Create a web application to demonstrate various states of ASP.NET Pages.
6.	Working with Database
a.	Create a web application bind data in a multiline textbox by querying in another textbox.
b.	Create a web application to display records by using database.
c.	Demonstrate the use of Datalist link control.
7.	Working with Database
a.	Create a web application to display Databinding using dropdownlist control.
b.	Create a web application for to display the phone no of an author using database.
c.	Create a web application for inserting and deleting record from a database. (Using Execute-Non Query).
8.	Working with data controls
a.	Create a web application to demonstrate various uses and properties of SqlDataSource.
b.	Create a web application to demonstrate data binding using DetailsView and Form View Control.
c.	Create a web application to display Using Disconnected Data Access and Databinding using GridView.
9.	Working with GridView control
a.	Create a web application to demonstrate use of GridView control template and GridView hyperlink.
b.	Create a web application to demonstrate use of GridView button column and GridView events.
c.	Create a web application to demonstrate GridView paging and Creating own table format using GridView.



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10.	Working with AJAX and XML
a.	Create a web application to demonstrate reading and writing operation with XML.
b.	Create a web application to demonstrate Form Security and Windows Security with proper Authentication and Authorization properties.
c.	Create a web application to demonstrate use of various Ajax controls.
11.	Programs to create and use DLL

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B. Sc. (Information Technology)		Semester – V	
Course Name: Linux System Administration		Course Code: USIT5P5 (Elective I)	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:	
0	Installation of RHEL 6.X
1	Graphical User Interface and Command Line Interface and Processes
a	Exploring the Graphical Desktop
b	The Command Line Interface
c	Managing Processes
2	Storage Devices and Links, Backup and Repository
a	Working with Storage Devices and Links
b	Making a Backup
c	Creating a Repository
3	Working with RPMs Storage and Networking
a	Using Query Options
b	Extracting Files From RPMs
c	Configuring and Managing Storage
d	Connecting to the Network
4	Working with Users, Groups, and Permissions
5	Firewall and Cryptographic services
a	Securing Server with iptables
b	Setting Up Cryptographic Services
6	Configuring Server for File Sharing
a	Configuring NFS Server and Client
b	Configuring Samba
c	Configuring FTP
7	DNS, DHCP and Mail Server
a	Configuring DNS
b	Configuring DHCP
c	Setting Up a Mail Server
8	Web Server

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a	Configuring Apache on Red Hat Enterprise Linux
b	Writing a Script to Monitor Activity on the Apache Web Server
c	Using the select Command
9	Shell Scripts and High-Availability Clustering
a	Writing Shell Scripts
b	Configuring Booting with GRUB
c	Configuring High Availability Clustering
10	Setting Up an Installation Server
a	Configuring Network Server as an Installation Server
b	Setting Up a TFTP and DHCP Server for PXE Boot

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B. Sc. (Information Technology)		Semester – V	
Course Name: Enterprise Java		Course Code: USIT5P6 (Elective II)	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:

1. Implement the following Simple Servlet applications.
a. Create a simple calculator application using servlet.
b. Create a servlet for a login page. If the username and password are correct then it says message "Hello <username>" else a message "login failed"
c. Create a registration servlet in Java using JDBC. Accept the details such as Username, Password, Email, and Country from the user using HTML Form and store theregistration details in the database.
2. Implement the following Servlet applications with Cookies and Sessions.
a. Using Request Dispatcher Interface create a Servlet which will validate the password entered by the user, if the user has entered "Servlet" as password, then he will be forwarded to Welcome Servlet else the user will stay on the index.html page and anerror message will be displayed.
b. Create a servlet that uses Cookies to store the number of times a user has visited servlet.
c. Create a servlet demonstrating the use of session creation and destruction. Also check whether the user has visited this page first time or has visited earlier also using sessions.
3. Implement the Servlet IO and File applications.
a. Create a Servlet application to upload and download a file.
b. Develop Simple Servlet Question Answer Application using Database.
c. Create simple Servlet application to demonstrate Non-Blocking Read Operation.
4. Implement the following JSP applications.
a. Develop a simple JSP application to display values obtained from the use of intrinsic objects of various types.
b. Develop a simple JSP application to pass values from one page to another with validations. (Name-txt, age-txt, hobbies-checkbox, email-txt, gender-radio button).
c. Create a registration and login JSP application to register and authenticate the user based on username and password using JDBC.
5. Implement the following JSP JSTL and EL Applications.

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a.	Create an html page with fields, eno, name, age, desg, salary. Now on submit this data to a JSP page which will update the employee table of database with matching eno.
b.	Create a JSP page to demonstrate the use of Expression language.
c.	Create a JSP application to demonstrate the use of JSTL.
6.	Implement the following EJB Applications.
a.	Create a Currency Converter application using EJB.
b.	Develop a Simple Room Reservation System Application Using EJB.
c.	Develop simple shopping cart application using EJB [Stateful Session Bean].
7.	Implement the following EJB applications with different types of Beans.
a.	Develop simple EJB application to demonstrate Servlet Hit count using Singleton Session Beans.
b.	Develop simple visitor Statistics application using Message Driven Bean [Stateless Session Bean].
c.	Develop simple Marks Entry Application to demonstrate accessing Database using EJB.
8.	Implement the following JPA applications.
a.	Develop a simple Inventory Application Using JPA.
b.	Develop a Guestbook Application Using JPA.
c.	Create simple JPA application to store and retrieve Book details.
9.	Implement the following JPA applications with ORM and Hibernate.
a.	Develop a JPA Application to demonstrate use of ORM associations.
b.	Develop a Hibernate application to store Feedback of Website Visitor in MySQL Database.
c.	Develop a Hibernate application to store and retrieve employee details in MySQL Database.
10.	Implement the following Hibernate applications.
a.	Develop an application to demonstrate Hibernate One- To -One Mapping Using Annotation.
b.	Develop Hibernate application to enter and retrieve course details with ORM Mapping.
c.	Develop a five page web application site using any two or three Java EE Technologies.



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PRACTICAL SYLLABUS SEMESTER-IV

B. Sc. (Information Technology)		Semester – VI	
Course Name: Project Implementation		Course Code: USIT6P1	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	150
	Internal	--	-

B. Sc. (Information Technology)		Semester – VI	
Course Name: Security in Computing Practical		Course Code: USIT6P2	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	-

List of Practical:

1	Configure Routers
a	OSPF MD5 authentication.
b	NTP.
c	to log messages to the syslog server.
d	to support SSH connections.
2	Configure AAA Authentication
a	Configure a local user account on Router and configure authenticate on the console and vty lines using local AAA
b	Verify local AAA authentication from the Router console and the PC-A client
3	Configuring Extended ACLs
a	Configure, Apply and Verify an Extended Numbered ACL
4	Configure IP ACLs to Mitigate Attacks and IPV6 ACLs
a	Verify connectivity among devices before firewall configuration.
b	Use ACLs to ensure remote access to the routers is available only from management station PC-C.
c	Configure ACLs on to mitigate attacks.
d	Configuring IPv6 ACLs
5	Configuring a Zone-Based Policy Firewall

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6	Configure IOS Intrusion Prevention System (IPS) Using the CLI
a	Enable IOS IPS.
b	Modify an IPS signature.
7	Layer 2 Security
a	Assign the Central switch as the root bridge.
b	Secure spanning-tree parameters to prevent STP manipulation attacks.
c	Enable port security to prevent CAM table overflow attacks.
8	Layer 2 VLAN Security
9	Configure and Verify a Site-to-Site IPsec VPN Using CLI
10	Configuring ASA Basic Settings and Firewall Using CLI
a	Configure basic ASA settings and interface security levels using CLI
b	Configure routing, address translation, and inspection policy using CLI
c	Configure DHCP, AAA, and SSH
d	Configure a DMZ, Static NAT, and ACLs

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B. Sc. (Information Technology)		Semester – VI	
Course Name: Business Intelligence Practical		Course Code: USIT6P3	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	-

List of Practical:

1	Import the legacy data from different sources such as (Excel , SqlServer, Oracle etc.)and load in the target system. (You can download sample database such as Adventureworks, Northwind, foodmart etc.)
2	Perform the Extraction Transformation and Loading (ETL) process to construct the database in the Sqlserver.
3	a. Create the Data staging area for the selected database. b. Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.
4	a. Create the ETL map and setup the schedule for execution. b. Execute the MDX queries to extract the data from the datawarehouse.
5	a. Import the datawarehouse data in Microsoft Excel and create the Pivot table and Pivot Chart. b. Import the cube in Microsoft Excel and create the Pivot table and Pivot Chart to perform data analysis.
6	Apply the what – if Analysis for data visualization. Design and generate necessary reports based on the data warehouse data.
7	Perform the data classification using classification algorithm.
8	Perform the data clustering using clustering algorithm.
9	Perform the Linear regression on the given data warehouse data.
10	Perform the logistic regression on the given data warehouse data.

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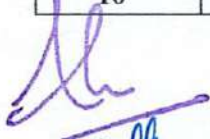
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B. Sc. (Information Technology)		Semester – VI	
Course Name: Principles of Geographical Information System Practical		Course Code: USIT6P4 (Elective II)	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	-

List of Practical:	
0	Familiarizing Quantum GIS: Installation of QGIS, datasets for both Vector and Raster data, Maps.
1	Creating and Managing Vector Data: Adding vector layers, setting properties, formatting, calculating line lengths and statistics
2	Exploring and Managing Raster data: Adding raster layers, raster styling and analysis, raster mosaicking and clipping
3	Making a Map, Working with Attributes, Importing Spreadsheets or CSV files Using Plugins, Searching and Downloading OpenStreetMap Data
4	Working with attributes, terrain Data
5	Working with Projections and WMS Data
6	Georeferencing Topo Sheets and Scanned Maps Georeferencing Aerial Imagery Digitizing Map Data
7	Managing Data Tables and Spatial data Sets: Table joins, spatial joins, points in polygon analysis, performing spatial queries
8	Advanced GIS Operations I: Nearest Neighbor Analysis, Sampling Raster Data using Points or Polygons, Interpolating Point Data
9	Advance GIS Operations 2: Batch Processing using Processing Framework Automating Complex Workflows using Processing Modeler Automating Map Creation with Print Composer Atlas
10	Validating Map data


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B. Sc. (Information Technology)		Semester – VI	
Course Name: Advanced Mobile Programming Practical		Course Code: USIT6P6	
Periods per week (1 Period is 50 minutes)		3	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2½	50
	Internal	--	--

List of Practical:

1	Introduction to Android, Introduction to Android Studio IDE, Application Fundamentals: Creating a Project, Android Components, Activities, Services, Content Providers, Broadcast Receivers, Interface overview, Creating Android Virtual device, USB debugging mode, Android Application Overview. Simple "Hello World" program.
2	Programming Resources Android Resources: (Color, Theme, String, Drawable, Dimension, Image),
3	Programming Activities and fragments Activity Life Cycle, Activity methods, Multiple Activities, Life Cycle of fragments and multiple fragments.
4	Programs related to different Layouts Coordinate, Linear, Relative, Table, Absolute, Frame, List View, Grid View.
5	Programming UI elements AppBar, Fragments, UI Components
6	Programming menus, dialog, dialog fragments
7	Programs on Intents, Events, Listeners and Adapters The Android Intent Class, Using Events and Event Listeners
8	Programs on Services, notification and broadcast receivers
9	Database Programming with SQLite
10	Programming threads, handles and asynchronized programs
11	Programming Media API and Telephone API
12	Programming Security and permissions
13	Programming Network Communications and Services (JSON)


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F.Y.B.Sc.IT SEMESTER-I
PRACTICAL EXAMINATION DECEMBER-2022

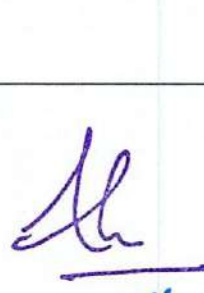
Time Table

Day/Date	Time	Batch	Subject
Monday 05/12/2022	9:00 AM TO 11:00 AM	I	Programming Principle with C
		II	Digital Logic and Applications
Tuesday 06/12/2022	9:00 AM TO 11:00 AM	I	Digital Logic and Applications
		II	Programming Principle with C
Wednesday 07/12/2022	9.00 AM TO 11.00 AM	I	Fundamental of Database management Systems
		II	Technical Communication Skills
Thursday 08/12/2022	9.00 AM TO 11.00 AM	I	Technical Communication Skills
		II	Fundamental of Database management Systems
Friday 09/12/2022	9.00 AM TO 11.00 AM	I & II	Computational Logic and Discrete Structures

Batch I: Roll No 01 to 33

Batch II: Roll No 34 to 70




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F.Y.B.Sc.IT SEMESTER-II
PRACTICAL EXAMINATION MARCH-2023

Time Table

Day/Date	Time	Batch	Subject
Tuesday 14/03/2023	8.00 AM To 10.00 AM	I	Object Oriented Programming
	10.30 AM To 12.30 PM	II	
Wednesday 15/03/2023	8.00 AM To 10.00 AM	I	Microprocessor Architecture
	10.30 AM To 12.30 PM	II	
Thursday 16/03/2023	8.00 AM To 10.00 AM	I	Web Application Development
	10.30 AM To 12.30 PM	II	
Friday 17/03/2023	8.00 AM To 10.00 AM	I	Numerical Methods
	10.30 AM To 12.30 PM	II	
Saturday 18/03/2023	8.00 AM To 10.00 AM	I	PL/SQL
	10.30 AM To 12.30 PM	II	

Batch I: Roll No 01 to 35

Batch II: Roll No 36 to 70




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S.Y.B.Sc.IT SEMESTER-III
PRACTICAL EXAMINATION OCTOBER-2022

Time Table

Day/Date	Time	Subject
Wednesday 5/10/2022	8.00 AM TO 10.00 AM	Python Programming
Thursday 6/10/2022	8.00 AM TO 10.00 AM	Data Structures
Friday 7/10/2022	8.00 AM TO 10.00 AM	Computer Networks
Saturday 8/10/2022	8.00 AM TO 10.00 AM	Operating Systems
Monday 10/10/2022	10.00 AM TO 12.00 PM	Applied Mathematics

Batch I: From Roll No 01 to 18

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S.Y.B.Sc.IT SEMESTER-IV
PRACTICAL EXAMINATION MARCH-2023

Time Table

Day/Date	Time	Subject
Monday 6/3/2023	8.00 AM TO 10.00 AM	Core Java
Tuesday 7/3/2023	8.00 AM TO 10.00 AM	Introduction to Embedded Systems
Wednesday 9/3/2023	8.00 AM TO 10.00 AM	Computer Oriented Statistical Techniques
Thursday 10/3/2023	8.00 AM TO 10.00 AM	Software Engineering
Friday 11/3/2023	10.00 AM TO 12.00 PM	Computer Graphics and Animation

Batch I: From Roll No 01 to 18

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T.Y.B.Sc.IT SEMESTER-V
PRACTICAL EXAMINATION NOVEMBER-2022

Time Table

Day/Date	Time	Subject Code	Subject
Monday 10/11/2022	9.00 AM TO 11:00 AM	USIT5P1	Project Dissertation
Tuesday 11/11/2022	9.00 AM TO 11:00 AM	USIT5P2	Internet of Things
Wednesday 12/11/2022	9.00 AM TO 11:00 AM	USIT5P3	Advanced Web Programming
Thursday 14/11/2023	9.00 AM TO 11:00 AM	USIT5P5	Linux Administration
Friday 15/11/2023	09.00 AM TO 11:00 AM	USIT5P6	Enterprise Java

Batch I: From Roll No 01 to 27

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T.Y.B.Sc.IT SEMESTER-VI
PRACTICAL EXAMINATION APRIL-2023

Time Table

Day/Date	Time	Subject Code	Subject
Tuesday 25/04/2023	9.00 AM TO 1:00 PM	USIT6P1	Project Implementation
Tuesday 02/05/2023	9.00 AM TO 11:00 AM	USIT6P6	Advanced Mobile Programming
Wednesday 03/05/2023	9.00 AM TO 11:00 AM	USIT6P2	Security in Computing
Thursday 04/05/2023	9.00 AM TO 11:00 AM	USIT6P3	Business Intelligence
Saturday 06/05/2023	09.00 AM TO 11:00 AM	USIT6P4	Principles of Geographic Information Systems

Batch I: From Roll No 01 to 27




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Note :

- Theory 5 lectures per week.
- Practical batch size 30-35, 3 practical = 5 theory lectures per week.
- At least 8 Practical's are to be completed in each semester.

Practical Evaluation (50 marks)

A Certified copy journal is essential to appear for the practical examination.

1.	Practical Question 1	20
2.	Practical Question 2	20
3.	Journal	5
4.	Viva Voce	5

OR

1.	Practical Question	40
2.	Journal	5
3.	Viva Voce	5

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M.Sc.(Information Technology)Part-1 Semester wise Practical Syllabus w.e.f 2019-2020 onwards

PRACTICAL SYLLABUS SEMESTER-I

M. Sc (Information Technology)		Semester – 1	
Course Name: Research in Computing Practicals		Course Code: PSIT1P1	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:	
1a	Write a program for obtaining on descriptive statistics of data.
1b	Import data from different data sources (from Excel, csv, mysql, sql server, oracle to R/Python/Excel)
2a	Design a survey form for a given case study, collect the primary data and analyse it
2b	Perform suitable analysis of given secondary data.
3a	Perform testing of hypothesis using one sample t-test.
3b	Perform testing of hypothesis using two sample t-test.
3c	Perform testing of hypothesis using paired t-test.
4a	Perform testing of hypothesis using chi-squared goodness-of-fit test.
4b	Perform testing of hypothesis using chi-squared Test of Independence
5	Perform testing of hypothesis using Z-test.
6a	Perform testing of hypothesis using one-way ANOVA.
6b	Perform testing of hypothesis using two-way ANOVA.
6c	Perform testing of hypothesis using multivariate ANOVA (MANOVA).
7a	Perform the Random sampling for the given data and analyse it.
7b	Perform the Stratified sampling for the given data and analyse it.
8	Compute different types of correlation.
9a	Perform linear regression for prediction.
9b	Perform polynomial regression for prediction.
10a	Perform multiple linear regression.
10b	Perform Logistic regression.

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M. Sc (Information Technology)		Semester – I	
Course Name: Data Science Practicals		Course Code: PSIT1P2	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:

1	Creating Data Model using Cassandra.
2	Conversion from different formats to HOURS format. a. Text delimited csv format. b. XML c. JSON d. MySQL Database e. Picture (JPEG) f. Video g. Audio
3	Utilities and Auditing
4	Retrieving Data
5	Assessing Data
6	Processing Data
7	Transforming Data
8	Organizing Data
9	Generating Reports
10	Data Visualization with Power BI

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M. Sc (Information Technology)		Semester – I	
Course Name: Cloud Computing Practicals		Course Code: PSIT1P3	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:	
1	Implement TCP Programming
2	Implement UDP Programming
3	Multicast Socket
4	Implement object communication using RMI
5	Show the implementation of web services
6	Implement Xen virtualization and manage with Xen Center
7	Implement virtualization using VMWare ESXi Server and managing with vCenter
8	Implement Windows Hyper V virtualization
9	Develop application for Microsoft Azure.
10	Develop application for Google App Engine

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M. Sc (Information Technology)		Semester – I	
Course Name: Soft Computing Practicals		Course Code: PSIT1P4	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:

1	Implement the following:
a.	Design a simple linear neural network model.
b.	Calculate the output of neural net using both binary and bipolar sigmoidal function.
2	Implement the following:
a.	Generate AND/NOT function using McCulloch-Pitts neural net.
b.	Generate XOR function using McCulloch-Pitts neural net.
3	Implement the Following
a.	Write a program to implement Hebb's rule.
b.	Write a program to implement of delta rule.
4.	Implement the Following
a.	Write a program for Back Propagation Algorithm
b.	Write a program for error Backpropagation algorithm.
5.	Implement the Following
a.	Write a program for Hopfield Network.
b.	Write a program for Radial Basis function
6.	Implement the Following
a.	Kohonen Self organizing map
b.	Adaptive resonance theory
7.	Implement the Following
a.	Write a program for Linear separation.
b.	Write a program for Hopfield network model for associative memory
8.	Implement the Following
a.	Membership and Identity Operators in, not in,
b.	Membership and Identity Operators is, is not
9.	Implement the Following
a.	Find ratios using fuzzy logic
b.	Solve Tipping problem using fuzzy logic
10.	Implement the Following

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a.	Implementation of Simple genetic algorithm
b.	Create two classes: City and Fitness using Genetic algorithm

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UNIVERSITY OF MUMBAI

M. Sc. (Information Technology) Part – I Semester I CBCS Practical Examination Programme of the Practical Examination, January 2023

INSTRUCTION TO CANDIDATES

1. Every student will have to give Practical examination for four papers(courses). The order of papers, date and session will be indicated in the time table. There will be three sessions per day.

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Afternoon Session - II : 11.15 am to 1.15 pm.

Evening Session - III : 1:45 pm to 3:45 pm

2. Candidate should be present at the place of their examination at least 20 minutes before the commencement of the examination.
3. Candidate should bring with them their certified ORIGINAL copy of journal / project for all the papers. It should bear your Examination seat number on cover.
4. Candidate will not be allowed to keep any books, notes or papers with them, except writing instruments and ruler at the time of examination.
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6. Read the question in the practical slip carefully and perform the experiment that is required.
7. If there is anything in the setup of software that you don't know ask the examiner to help you.
8. The program codes as well as the output should be shown to the examiner for verification and assessment. The necessary hard copy of codes / output should be stapled to the answer sheet.
9. The candidate will be examined individually and should not leave the laboratory till they are allowed to do so by the Examiners.
- 10.(Courses) Paper I– PSIT1P1 – Research in Computing, Paper II – PSIT1P2 – Data Science, Paper III – PSIT1P3 – Cloud Computing, Paper IV – PSIT1P4- Soft Computing techniques)

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M. Sc. (Information Technology) Part – I Semester I CBCS Practical Examination Programme of the Practical Examination, January 2023

Examination Centre: Anjuman-i-Islams Akbar Peerbhoy College of Commerce and Economics,
Grant Road (E)

(Colleges: Akbar Peerbhoy(AP), Maharashtra, Navneet)

Total Students: 90

Date	Session	Paper	Seat No.s
January 20, 2023	I	I	3253530 3253531 3253534 3253545 3253547 3253551 3253555 3253560 3253568 3253570 3253575 3253588 (AP)
		II	3253590 3253591 3253594 3253595 3253597 3253598 3253599 3253603 3253604 3253613 3253615 3253617 (AP)
		III	3253532 3253533 3253535 3253536 3253537 3253538 3253539 3253540 3253541 3253542 3253544 (MAHARASHTRA)
		IV	3253546 3253548 3253549 3253554 3253557 3253558 3253559 3253563 3253566 3253567 (MAHARASHTRA)
	II	I	3253569 3253571 3253577 3253581 3253582 3253583 3253586 3253587 3253592 3253593 3253596 (MAHARASHTRA)
		II	3253602 3253605 3253606 3253607 3253608 3253609 3253610 3253611 3253612 3253616(MAHARASHTRA)
		III	3253543 3253550 3253552 3253553 3253556 3253561 3253562 3253564 3253565 3253572 3253573 3253574 (NAVNEET)
		IV	3253576 3253578 3253579 3253580 3253584 3253585 3253589 3253600 3253601 3253614 3253618 3253619 (NAVNEET)
January 21, 2023	I	II	3253530 3253531 3253534 3253545 3253547 3253551 3253555 3253560 3253568 3253570 3253575 3253588 (AP)
		III	3253590 3253591 3253594 3253595 3253597 3253598 3253599 3253603 3253604 3253613 3253615 3253617 (AP)
		IV	3253532 3253533 3253535 3253536 3253537 3253538 3253539 3253540 3253541 3253542 3253544 (MAHARASHTRA)
		I	3253546 3253548 3253549 3253554 3253557 3253558 3253559 3253563 3253566 3253567 (MAHARASHTRA)
	II	II	3253569 3253571 3253577 3253581 3253582 3253583 3253586 3253587 3253592 3253593 3253596 (MAHARASHTRA)
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	I	3253576 3253578 3253579 3253580 3253584 3253585 3253589 3253600 3253601 3253614 3253618 3253619 (NAVNEET)
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Date	Session	Paper	Seat No.s
January 23, 2023	I	III	3253530 3253531 3253534 3253545 3253547 3253551 3253555 3253560 3253568 3253570 3253575 3253588 (AP)
		IV	3253590 3253591 3253594 3253595 3253597 3253598 3253599 3253603 3253604 3253613 3253615 3253617 (AP)
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		IV	3253602 3253605 3253606 3253607 3253608 3253609 3253610 3253611 3253612 3253616(MAHARASHTRA)
		I	3253543 3253550 3253552 3253553 3253556 3253561 3253562 3253564 3253565 3253572 3253573 3253574 (NAVNEET)
		II	3253576 3253578 3253579 3253580 3253584 3253585 3253589 3253600 3253601 3253614 3253618 3253619 (NAVNEET)
January 24, 2023	I	IV	3253530 3253531 3253534 3253545 3253547 3253551 3253555 3253560 3253568 3253570 3253575 3253588 (AP)
		I	3253590 3253591 3253594 3253595 3253597 3253598 3253599 3253603 3253604 3253613 3253615 3253617 (AP)
		II	3253532 3253533 3253535 3253536 3253537 3253538 3253539 3253540 3253541 3253542 3253544 (MAHARASHTRA)
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	III	3253576 3253578 3253579 3253580 3253584 3253585 3253589 3253600 3253601 3253614 3253618 3253619 (NAVNEET)
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PRACTICAL SYLLABUS SEMESTER-II

M. Sc (Information Technology)		Semester – II	
Course Name: Big Data Analytics Practicals		Course Code: PSIT2P1	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:	
1.	Install, configure and run Hadoop and HDFS and explore HDFS.
2.	Implement word count / frequency programs using MapReduce
3.	Implement an MapReduce program that processes a weather dataset.
4.	Implement an application that stores big data in Hbase / MongoDB and manipulate it using R / Python
5.	Implement the program in practical 4 using Pig.
6.	Configure the Hive and implement the application in Hive.
7.	Write a program to illustrate the working of Jaql.
8.	Implement the following:
a.	Implement Decision tree classification techniques
b.	Implement SVM classification techniques
9.	Solve the following:
a.	REGRESSION MODEL Import a data from web storage. Name the dataset and now do Logistic Regression to find out relation between variables that are affecting the admission of a student in an institute based on his or her GRE score, GPA obtained and rank of the student. Also check the model is fit or not. require (foreign), require(MASS).
b.	MULTIPLE REGRESSION MODEL Apply multiple regressions, if data have a continuous independent variable. Apply on above dataset.
10.	Solve the Following:
a.	CLASSIFICATION MODEL a. Install relevant package for classification. b. Choose classifier for classification problem. c. Evaluate the performance of classifier.
b.	CLUSTERING MODEL a. Clustering algorithms for unsupervised classification. b. Plot the cluster data using R visualizations.

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M. Sc (Information Technology)		Semester – II	
Course Name: Modern Networking Practicals		Course Code: PSIT2P2	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:

1.	Configure IP SLA Tracking and Path Control Topology
2.	Using the AS_PATH Attribute
3.	Configuring iBGP and eBGP Sessions, Local Preference, and MED
4.	Secure the Management Plane
5.	Configure and Verify Path Control Using PBR
6.	IP Service Level Agreements and Remote SPAN in a Campus Environment
7.	Inter-VLAN Routing
8.	Simulating MPLS environment
9.	Simulating VRF
10.	Simulating SDN with <ul style="list-style-type: none">• OpenDaylight SDN Controller with the Mininet Network Emulator• OFNet SDN network emulator
11.	Simulating OpenFlow Using MININET

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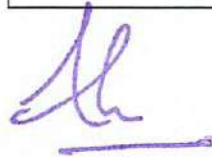

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M. Sc (Information Technology)		Semester – II	
Course Name: Microservices Architecture Practicals		Course Code: PSIT2P3	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:	
1	Building APT.NET Core MVC Application.
2	Building ASP.NET Core REST API.
3	Working with Docker, Docker Commands, Docker Images and Containers
4	Installing software packages on Docker, Working with Docker Volumes and Networks.
5	Working with Docker Swarm.
6	Working with Circle CI for continuous integration.
7	Creating Microservice with ASP.NET Core.
8	Working with Kubernetes.
9	Creating Backing Service with ASP.NET Core.
10	Building real-time Microservice with ASP.NET Core.



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M. Sc (Information Technology)		Semester – II	
Course Name: Image Processing Practicals		Course Code: PSIT2P4	
Periods per week 1 Period is 60 minutes	Lectures	4	
	Credits	2	
		Hours	Marks
Evaluation System	Practical Examination	2	50

List of Practical:	
1.a.	Program to calculate number of samples required for an image.
b.	Program to study the effects of reducing the spatial resolution of a digital image.
c.	Program to study the effects of varying the number of intensity levels in a digital image.
d.	Program to perform image averaging (image addition) for noise reduction.
e.	Program to compare images using subtraction for enhancing the difference between images.
f.	Image Registration.
2.	Intensity transformation and Spatial Filtering
	IMAGE ENHANCEMENT
A.	Basic Intensity Transformation functions
	<ul style="list-style-type: none"> i. Program to perform Image negation ii. Program to perform threshold on an image. iii. Program to perform Log transformation iv. Power-law transformations v. Piecewise linear transformations <ul style="list-style-type: none"> a. Contrast Stretching b. Gray-level slicing with and without background. c. Bit-plane slicing
B.	<ul style="list-style-type: none"> 1. Program to plot the histogram of an image and categorise 2. Program to apply histogram equalization
C.	Write a program to perform convolution and correlation
D.	Write a program to apply smoothing and sharpening filters on grayscale and color images <ul style="list-style-type: none"> a) Low Pass b) High Pass Note: Use all kernels mentioned in the reference book
3.	Filtering in Frequency Domain

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	a) Program to apply Discrete Fourier Transform on an image
	b) Program to apply Low pass and High pass filters in frequency domain
	c) Program to apply Laplacian filter in frequency domain
	d) Note: All other filters can be applied, studied and compared with filters in spatial domain.
	e) Program for high frequency emphasis filtering, high boost and homomorphic filtering.
4.	Image Denoising
	i. Program to denoise using spatial mean, median and adaptive mean filtering
	ii. Program for Image deblurring using inverse, Weiner filters
5.	Color Image Processing
	i. Program to read a color image and segment into RGB planes , histogram of color image
	ii. Program for converting from one color model to another model
	iii. Program to apply false colouring(pseudo) on a gray scale image
6.	Fourier Related Transforms
	Program to compute Discrete Cosine Transforms, Walsh -Hadamard Transforms, Haar Transform , Wavelet
7.	Image compression
	Program to apply compression and decompression algorithm on an image (Arithmetic, Huffman and LZW coding techniques.
8.	Morphological Image Processing
	i. Program to apply erosion, dilation, opening, closing
	ii. Program for detecting boundary of an image
	iii. Program to apply Hit-or-Miss transform
	iv. Program to apply morphological gradient on an image
	v. Program to apply Top-Hat/Bottom-hat Transformations
9.	Image Segmentation
	i. Program for Edge detection using a. Sobel, Prewitt, Marr-Hildreth and Camy
	ii. Illustrate Watershed segmentation algorithm
	iii. Any more to be included(to be consulted)
10.	Feature Extraction
	i. Apply Principal components for image description
	ii. Apply Harris-Stephens corner detector algorithm



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UNIVERSITY OF MUMBAI

M. Sc. (Information Technology) Part - I Semester II CBCS Practical Examination Programme of the Practical Examination, July 2023

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**Examination Centre: Anjuman-i-Islams Akbar Peerbhoy College of Commerce and Economics,
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(Colleges: Akbar Peerbhoy(AP), Maharashtra, Navneet)

Total Students:

Date	Session	Paper	Seat No.s
July 14, 2023	I	I	4133366 4133436 4133391 4133351 4133395 4133410 4133411 4133352 4133389 4133418 4133434 4133416 (Akabar Peerbhoy)
		II	4133425 4133381 4133408 4133376 4133438 4133415 4133424 4133420 4133372 4133355 4133368 4133419 (Akabar Peerbhoy)
		III	4133378 4133387 4133390 4133358 4133426 4133417 4133375 4133362 4133406 4133401 4133369 4133384 (Maharashtra)
		IV	4133357 4133359 4133380 4133397 4133392 4133379 4133353 4133428 4133431 4133365 4133423 4133363 (Maharashtra)
	II	I	4133354 4133367 4133402 4133412 4133361 4133356 4133430 4133360 4133407 4133403 4133432 4133437 (Maharashtra)
		II	4133429 4133413 4133427 4133433 4133370 4133388 (Maharashtra) 4133377 4133440 4133382 4133364 4133409 4133439 (Navneet)
		III	4133400 4133396 4133385 4133383 4133371 4133373 4133398 4133435 4133404 (Navneet)
		IV	4133394 4133393 4133405 4133399 4133421 4133374 4133386 4133422 4133414 (Navneet)
		II	4133366 4133436 4133391 4133351 4133395 4133410 4133411 4133352 4133389 4133418 4133434 4133416 (Akabar Peerbhoy)
		III	4133425 4133381 4133408 4133376 4133438 4133415

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July 15, 2023	I		4133424 4133420 4133372 4133355 4133368 4133419 (Akabar Peerbhoy)
		IV	4133378 4133387 4133390 4133358 4133426 4133417 4133375 4133362 4133406 4133401 4133369 4133384 (Maharashtra)
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M. Sc. (Information Technology) Part - I Semester II CBCS Practical Examination Programme of the Practical Examination, July 2023

July 17, 2023		IV	4133400 4133396 4133385 4133383 4133371 4133373 4133398 4133435 4133404 (Navneet)
		I	4133394 4133393 4133405 4133399 4133421 4133374 4133386 4133422 4133414 (Navneet)
	I	III	4133366 4133436 4133391 4133351 4133395 4133410 4133411 4133352 4133389 4133418 4133434 4133416 (Akabar Peerbhoy)
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	II	III	4133354 4133367 4133402 4133412 4133361 4133356 4133430 4133360 4133407 4133403 4133432 4133437 (Maharashtra)
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		II	4133394 4133393 4133405 4133399 4133421 4133374 4133386 4133422 4133414(Navneet)
July 18, 2023	I	IV	4133366 4133436 4133391 4133351 4133395 4133410 4133411 4133352 4133389 4133418 4133434 4133416 (Akabar Peerbhoy)
		I	4133425 4133381 4133408 4133376 4133438 4133415 4133424 4133420 4133372 4133355 4133368 4133419 (Akabar Peerbhoy)
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PRINCIPAL

**M.Sc.(Information Technology)Part-2 Semester wise Practical Syllabus
w.e.f 2020-2021 onwards**

PRACTICAL SYLLABUS SEMESTER-III

M. Sc (Information Technology)		Semester – III	
Course Name: Project Documentation and Viva		Course Code: PSIT3P1	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	-

M. Sc (Information Technology)		Semester – III	
Course Name: Security Breaches and Countermeasures Practical		Course Code: PSIT3P2d	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	-

List of Practical:	
1.	a. Use the following tools to perform footprinting and reconnaissance
	i. Recon-ng (Using Kali Linux)
	ii. FOCA Tool
	iii. Windows Command Line Utilities
	• Ping
	• Tracert using Ping
	• Tracert
	• NSLookup
	iv. Website Copier Tool – HTTrack

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	v. Metasploit (for information gathering)
	vi. Whois Lookup Tools for Mobile – DNS Tools, Whois, Ultra Tools Mobile
	vii. Smart Whois
	viii. eMailTracker Pro
	ix. Tools for Mobile – Network Scanner, Fing – Network Tool, Network Discovery Tool, Port Droid Tool
	b. Scan the network using the following tools:
	i. Hping2 / Hping3
	ii. Advanced IP Scanner
	iii. Angry IP Scanner
	iv. Masscan
	v. NEET
	vi. CurrPorts
	vii. Colasoft Packet Builder
	viii. The Dude
	ix.
2.	c. Use Proxy Workbench to see the data passing through it and save the data to file.
	d. Perform Network Discovery using the following tools:
	i. Solar Wind Network Topology Mapper
	ii. OpManager
	iii. Network View
	iv. LANState Pro
	e. Use the following censorship circumvention tools:
	i. Alkasir
	ii. Tails OS
	f. Use Scanning Tools for Mobile – Network Scanner, Fing – Network Tool, Network Discovery Tool, Port Droid Tool
3.	a. Perform Enumeration using the following tools:
	i. Nmap
	ii. NetBIOS Enumeration Tool
	iii. SuperScan Software
	iv. Hyena
	v. SoftPerfect Network Scanner Tool
	vi. OpUtils
	vii. SolarWinds Engineer's Toolset
	viii. Wireshark
	b. Perform the vulnerability analysis using the following tools:
	i. Nessus

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	ii. OpenVas
4.	a. Perform mobile network scanning using NESSUS.
	b. Perform the System Hacking using the following tools:
	i. Winrtgen
	ii. PWDump
	iii. Ophcrack
	iv. Flexispy
	v. NTFS Stream Manipulation
	vi. ADS Spy
	vii. Snow
	viii. Quickstego
	ix. Clearing Audit Policies
	x. Clearing Logs
5.	a. Use Wireshark to sniff the network.
	b. Use SMAC for MAC Spoofing.
	c. Use Caspa Network Analyser.
	d. Use Omnipcap Network Analyser.
6.	a. Use Social Engineering Toolkit on Kali Linux to perform Social Engineering using Kali Linux.
	b. Perform the DDOS attack using the following tools:
	i. HOIC
	ii. LOIC
	iii. HULK
	iv. Metasploit
	c. Using Burp Suite to inspect and modify traffic between the browser and target application.
7.	a. Perform Web App Scanning using OWASP Zed Proxy.
	b. Use droidsheep on mobile for session hijacking
	c. Demonstrate the use of the following firewalls:
	i. ZoneAlarm and analyse using Firewall Analyzer.
	ii. Comodo Firewall
	d. Use HoneyBOT to capture malicious network traffic.
	e. Use the following tools to protect attacks on the web servers:
	i. ID Server
	ii. Microsoft Baseline Security Analyzer
	iii. Syhunt Hybrid
8.	a. Protect the Web Application using dotDefender.
	b. Demonstrate the following tools to perform SQL Injection:
	i. Tyrant SQL

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	ii. Havij
	iii. BBQSQL
9.	Use Aircrack-ng suite for wireless hacking and countermeasures.
10.	Use the following tools for cryptography
	i. HashCalc
	ii. Advanced Encryption Package
	iii. MD5 Calculator
	iv. TrueCrypt
	v. CrypTool

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M. Sc (Information Technology)		Semester – III	
Course Name: Malware Analysis Practical		Course Code: PS113P3d	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	-

List of Practical:

1.	a. Files: <i>Lab01-01.exe</i> and <i>Lab01-01.dll</i> .
	i. Upload the files to http://www.VirusTotal.com/ and view the reports. Does either file match any existing antivirus signatures?
	ii. When were these files compiled?
	iii. Are there any indications that either of these files is packed or obfuscated? If so, what are these indicators?
	iv. Do any imports hint at what this malware does? If so, which imports are they?
	v. Are there any other files or host-based indicators that you could look for on infected systems?
	vi. What network-based indicators could be used to find this malware on infected machines?
	vii. What would you guess is the purpose of these files?
	b. Analyze the file <i>Lab01-02.exe</i> .
	i. Upload the <i>Lab01-02.exe</i> file to http://www.VirusTotal.com/ . Does it match any existing antivirus definitions?
	ii. Are there any indications that this file is packed or obfuscated? If so, what are these indicators? If the file is packed, unpack it if possible.
	iii. Do any imports hint at this program's functionality? If so, which imports are they and what do they tell you?
	iv. What host- or network-based indicators could be used to identify this malware on infected machines?
	c. Analyze the file <i>Lab01-03.exe</i> .
	i. Upload the <i>Lab01-03.exe</i> file to http://www.VirusTotal.com/ . Does it match any existing antivirus definitions?
	ii. Are there any indications that this file is packed or obfuscated? If so, what are these indicators? If the file is packed, unpack it if possible.

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	iii. Do any imports hint at this program's functionality? If so, which imports are they and what do they tell you?
	iv. What host- or network-based indicators could be used to identify this malware on infected machines?
	d. Analyze the file Lab01-04.exe.
	i. Upload the <i>Lab01-04.exe</i> file to http://www.VirusTotal.com/ . Does it match any existing antivirus definitions?
	ii. Are there any indications that this file is packed or obfuscated? If so, what are these indicators? If the file is packed, unpack it if possible.
	iii. When was this program compiled?
	iv. Do any imports hint at this program's functionality? If so, which imports are they and what do they tell you?
	v. What host- or network-based indicators could be used to identify this malware on infected machines?
	vi. This file has one resource in the resource section. Use Resource Hacker to examine that resource, and then use it to extract the resource. What can you learn from the resource?
	e. Analyze the malware found in the file Lab03-01.exe using basic dynamic analysis tools.
	i. What are this malware's imports and strings?
	ii. What are the malware's host-based indicators?
	iii. Are there any useful network-based signatures for this malware? If so, what are they?
	f. Analyze the malware found in the file Lab03-02.dll using basic dynamic analysis tools.
	i. How can you get this malware to install itself?
	ii. How would you get this malware to run after installation?
	iii. How can you find the process under which this malware is running?
	iv. Which filters could you set in order to use procmon to glean information?
	v. What are the malware's host-based indicators?
	vi. Are there any useful network-based signatures for this malware?
	g. Execute the malware found in the file Lab03-03.exe while monitoring it using basic dynamic analysis tools in a safe environment
	i. What do you notice when monitoring this malware with Process Explorer?
	ii. Can you identify any live memory modifications?
	iii. What are the malware's host-based indicators?
	iv. What is the purpose of this program?
	h. Analyze the malware found in the file Lab03-04.exe using basic dynamic analysis

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	tools.
	i. What happens when you run this file?
	ii. What is causing the roadblock in dynamic analysis?
	iii. Are there other ways to run this program?
2.	a. Analyze the malware found in the file Lab05-01.dll using only IDA Pro. The goal of this lab is to give you hands-on experience with IDA Pro. If you've already worked with IDA Pro, you may choose to ignore these questions and focus on reverse-engineering the malware.
	i. What is the address of DllMain?
	ii. Use the Imports window to browse to gethostbyname. Where is the import located?
	iii. How many functions call gethostbyname?
	iv. Focusing on the call to gethostbyname located at 0x10001757, can you figure out which DNS request will be made?
	v. How many local variables has IDA Pro recognized for the subroutine at 0x10001656?
	vi. How many parameters has IDA Pro recognized for the subroutine at 0x10001656?
	vii. Use the Strings window to locate the string \cmd.exe /c in the disassembly. Where is it located?
	viii. What is happening in the area of code that references \cmd.exe/c?
	ix. In the same area, at 0x100101C8, it looks like dword_1008E5C4 is a global variable that helps decide which path to take. How does the malware set dword_1008E5C4? (Hint: Use dword_1008E5C4's cross-references.)
	x. A few hundred lines into the subroutine at 0x1000FF58, a series of comparisons use memcmpt to compare strings. What happens if the string comparison to robotwork is successful (when memcmpt returns 0)?
	xi. What does the export PSLIST do?
	xii. Use the graph mode to graph the cross-references from sub_10004E79. Which API functions could be called by entering this function? Based on the API functions alone, what could you rename this function?
	xiii. How many Windows API functions does DllMain call directly? How many at a depth of 2?
	xiv. At 0x10001358, there is a call to Sleep (an API function that takes one parameter containing the number of milliseconds to sleep). Looking backward through the code, how long will the program sleep if this code executes?
	xv. At 0x10001701 is a call to socket. What are the three parameters?
	xvi. Using the MSDN page for socket and the named symbolic constants functionality in IDA Pro, can you make the parameters more meaningful? What are the parameters after you apply changes?

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	xvii. Search for usage of the <code>in</code> instruction (opcode <code>0xED</code>). This instruction is used with a magic string <code>VMXh</code> to perform VMware detection. Is that in use in this malware? Using the cross-references to the function that executes the <code>in</code> instruction, is there further evidence of VMware detection?
	xviii. Jump your cursor to <code>0x1001D988</code> . What do you find?
	xix. If you have the IDA Python plug-in installed (included with the commercial version of IDA Pro), run <code>Lab05-01.py</code> , an IDA Pro Python script provided with the malware for this book. (Make sure the cursor is at <code>0x1001D988</code> .) What happens after you run the script?
	xx. With the cursor in the same location, how do you turn this data into a single ASCII string?
	xxi. Open the script with a text editor. How does it work?
	b. analyze the malware found in the file <code>Lab06-01.exe</code> .
	i. What is the major code construct found in the only subroutine called by <code>main</code> ?
	ii. What is the subroutine located at <code>0x40105F</code> ?
	iii. What is the purpose of this program?
	c. Analyze the malware found in the file <code>Lab06-02.exe</code> .
	i. What operation does the first subroutine called by <code>main</code> perform?
	ii. What is the subroutine located at <code>0x40117F</code> ?
	iii. What does the second subroutine called by <code>main</code> do?
	iv. What type of code construct is used in this subroutine?
	v. Are there any network-based indicators for this program?
	vi. What is the purpose of this malware?
	d. analyze the malware found in the file <code>Lab06-03.exe</code> .
	i. Compare the calls in <code>main</code> to <code>Lab 6-2</code> 's <code>main</code> method. What is the new function called from <code>main</code> ?
	ii. What parameters does this new function take?
	iii. What major code construct does this function contain?
	iv. What can this function do?
	v. Are there any host-based indicators for this malware?
	vi. What is the purpose of this malware?
	e. analyze the malware found in the file <code>Lab06-04.exe</code> .
	i. What is the difference between the calls made from the <code>main</code> method in <code>Labs 6-3</code> and <code>6-4</code> ?
	ii. What new code construct has been added to <code>main</code> ?
	iii. What is the difference between this lab's <code>parse HTML</code> function and those of the previous labs?
	iv. How long will this program run? (Assume that it is connected to the Internet.)
	v. Are there any new network-based indicators for this malware?

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	vi. What is the purpose of this malware?
3.	a. Analyze the malware found in the file Lab07-01.exe.
	i. How does this program ensure that it continues running (achieves persistence) when the computer is restarted?
	ii. Why does this program use a mutex?
	iii. What is a good host-based signature to use for detecting this program?
	iv. What is a good network-based signature for detecting this malware?
	v. What is the purpose of this program?
	vi. When will this program finish executing?
	b. Analyze the malware found in the file Lab07-02.exe.
	i. How does this program achieve persistence?
	ii. What is the purpose of this program?
	iii. When will this program finish executing?
	c. For this lab, we obtained the malicious executable, Lab07-03.exe, and DLL, Lab07-03.dll, prior to executing. This is important to note because the malware might change once it runs. Both files were found in the same directory on the victim machine. If you run the program, you should ensure that both files are in the same directory on the analysis machine. A visible IP string beginning with 127 (a loopback address) connects to the local machine. (In the real version of this malware, this address connects to a remote machine, but we've set it to connect to localhost to protect you.)
	i. How does this program achieve persistence to ensure that it continues running when the computer is restarted?
	ii. What are two good host-based signatures for this malware?
	iii. What is the purpose of this program?
	iv. How could you remove this malware once it is installed?
	d. Analyze the malware found in the file Lab09-01.exe using OllyDbg and IDA Pro to answer the following questions. This malware was initially analyzed in the Chapter 3 labs using basic static and dynamic analysis techniques.
	i. How can you get this malware to install itself?
	ii. What are the command-line options for this program? What is the password requirement?
	iii. How can you use OllyDbg to permanently patch this malware, so that it doesn't require the special command-line password?
	iv. What are the host-based indicators of this malware?
	v. What are the different actions this malware can be instructed to take via the network?
	vi. Are there any useful network-based signatures for this malware?
	e. Analyze the malware found in the file Lab09-02.exe using OllyDbg to answer the following questions.

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	i. What strings do you see statically in the binary?
	ii. What happens when you run this binary?
	iii. How can you get this sample to run its malicious payload?
	iv. What is happening at 0x00401133?
	v. What arguments are being passed to subroutine 0x00401089?
	vi. What domain name does this malware use?
	vii. What encoding routine is being used to obfuscate the domainname?
	viii. What is the significance of the CreateProcessAcall at 0x0040106E?
	f. Analyze the malware found in the file Lab09-03.exe using OllyDbg and IDA Pro. This malware loads three included DLLs (DLL1.dll, DLL2.dll, and DLL3.dll) that are all built to request the same memory load location. Therefore, when viewing these DLLs in OllyDbg versus IDA Pro, code may appear at different memory locations. The purpose of this lab is to make you comfortable with finding the correct location of code within IDA Pro when you are looking at code in OllyDbg
	i. What DLLs are imported by Lab09-03.exe?
	ii. What is the base address requested by DLL1.dll, DLL2.dll, and DLL3.dll?
	iii. When you use OllyDbg to debug Lab09-03.exe, what is the assigned based address for: DLL1.dll, DLL2.dll, and DLL3.dll?
	iv. When Lab09-03.exe calls an import function from DLL1.dll, what does this import function do?
	v. When Lab09-03.exe calls WriteFile, what is the filename it writes to?
	vi. When Lab09-03.exe creates a job using NetScheduleJobAdd, where does it get the data for the second parameter?
	vii. While running or debugging the program, you will see that it prints out three pieces of mystery data. What are the following: DLL 1 mystery data 1, DLL 2 mystery data 2, and DLL 3 mystery data 3?
	viii. How can you load DLL2.dll into IDA Pro so that it matches the load address used by OllyDbg?
4.	a. This lab includes both a driver and an executable. You can run the executable from anywhere, but in order for the program to work properly, the driver must be placed in the C:\Windows\System32 directory where it was originally found on the victim computer. The executable is Lab10-01.exe, and the driver is Lab10-01.sys.
	i. Does this program make any direct changes to the registry? (Use procmon to check.)
	ii. The user-space program calls the ControlService function. Can you set a breakpoint with WinDbg to see what is executed in the kernel as a result of the call to ControlService?
	iii. What does this program do?
	b. The file for this lab is Lab10-02.exe.

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	i. Does this program create any files? If so, what are they?
	ii. Does this program have a kernel component?
	iii. What does this program do?
	c. This lab includes a driver and an executable. You can run the executable from anywhere, but in order for the program to work properly, the driver must be placed in the C:\Windows\System32 directory where it was originally found on the victim computer. The executable is Lab10-03.exe, and the driver is Lab10-03.sys.
	i. What does this program do?
	ii. Once this program is running, how do you stop it?
	iii. What does the kernel component do?
5.	a. Analyze the malware found in Lab11-01.exe
	i. What does the malware drop to disk?
	ii. How does the malware achieve persistence?
	iii. How does the malware steal user credentials?
	iv. What does the malware do with stolen credentials?
	v. How can you use this malware to get user credentials from your test environment?
	b. Analyze the malware found in Lab11-02.dll. Assume that a suspicious file named Lab11-02.ini was also found with this malware.
	i. What are the exports for this DLL malware?
	ii. What happens after you attempt to install this malware using
	iii. rundll32.exe?
	iv. Where must Lab11-02.ini reside in order for the malware to install properly?
	v. How is this malware installed for persistence?
	vi. What user-space rootkit technique does this malware employ?
	vii. What does the hooking code do?
	viii. Which process(es) does this malware attack and why?
	ix. What is the significance of the .ini file?
	c. Analyze the malware found in Lab11-03.exe and Lab11-03.dll. Make sure that both files are in the same directory during analysis
	i. What interesting analysis leads can you discover using basic static analysis?
	ii. What happens when you run this malware?
	iii. How does Lab11-03.exe persistently install Lab11-03.dll?
	iv. Which Windows system file does the malware infect?
	v. What does Lab11-03.dll do?
	vi. Where does the malware store the data it collects?
6.	a. Analyze the malware found in the file Lab12-01.exe and Lab12-01.dll. Make sure that these files are in the same directory when performing the analysis.
	i. What happens when you run the malware executable?
	ii. What process is being injected?

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	iii. How can you make the malware stop the pop-ups?
	iv. How does this malware operate?
	b. Analyze the malware found in the file Lab12-02.exe.
	i. What is the purpose of this program?
	ii. How does the launcher program hide execution?
	iii. Where is the malicious payload stored?
	iv. How is the malicious payload protected?
	v. How are strings protected?
	c. Analyze the malware extracted during the analysis of Lab 12-2, or use the file Lab12-03.exe.
	i. What is the purpose of this malicious payload?
	ii. How does the malicious payload inject itself?
	iii. What filesystem residue does this program create?
	d. Analyze the malware found in the file Lab12-04.exe.
	i. What does the code at 0x401000 accomplish?
	ii. Which process has code injected?
	iii. What DLL is loaded using LoadLibraryA?
	iv. What is the fourth argument passed to the CreateRemoteThread call?
	v. What malware is dropped by the main executable?
7.	a. Analyze the malware found in the file Lab13-01.exe.
	i. Compare the strings in the malware (from the output of the strings command) with the information available via dynamic analysis. Based on this comparison, which elements might be encoded?
	ii. Use IDA Pro to look for potential encoding by searching for the string xor. What type of encoding do you find?
	iii. What is the key used for encoding and what content does it encode?
	iv. Use the static tools FindCrypt2, Krypto ANALyzer(KANAL), and the IDA Entropy Plugin to identify any other encoding mechanisms. What do you find?
	v. What type of encoding is used for a portion of the network traffic sent by the malware?
	vi. Where is the Base64 function in the disassembly?
	vii. What is the maximum length of the Base64-encoded data that is sent? What is encoded?
	viii. In this malware, would you ever see the padding characters (=or ==) in the Base64-encoded data?
	ix. What does this malware do?
	b. Analyze the malware found in the file Lab13-02.exe.
	i. Using dynamic analysis, determine what this malware creates.

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	ii. Use static techniques such as an xor search, FindCrypt2, KANAL, and the IDA Entropy Plugin to look for potential encoding. What do you find?
	iii. Based on your answer to question 1, which imported function would be a good prospect for finding the encoding functions?
	iv. Where is the encoding function in the disassembly?
	v. Trace from the encoding function to the source of the encoded content. What is the content?
	vi. Can you find the algorithm used for encoding? If not, how can you decode the content?
	vii. Using instrumentation, can you recover the original source of one of the encoded files?
	c. Analyze the malware found in the file Lab13-03.exe.
	i. Compare the output of strings with the information available via dynamic analysis. Based on this comparison, which elements might be encoded?
	ii. Use static analysis to look for potential encoding by searching for the string xor. What type of encoding do you find?
	iii. Use static tools like FindCrypt2, KANAL, and the IDA Entropy Plugin to identify any other encoding mechanisms. How do these findings compare with the XOR findings?
	iv. Which two encoding techniques are used in this malware?
	v. For each encoding technique, what is the key?
	vi. For the cryptographic encryption algorithm, is the key sufficient? What else must be known?
	vii. What does this malware do?
	viii. Create code to decrypt some of the content produced during dynamic analysis. What is this content?
8.	a. Analyze the malware found in file Lab14-01.exe. This program is not harmful to your system.
	i. Which networking libraries does the malware use, and what are their advantages?
	ii. What source elements are used to construct the networking beacon, and what conditions would cause the beacon to change?
	iii. Why might the information embedded in the networking beacon be of interest to the attacker?
	iv. Does the malware use standard Base64 encoding? If not, how is the encoding unusual?
	v. What is the overall purpose of this malware?
	vi. What elements of the malware's communication may be effectively detected using a network signature?
	vii. What mistakes might analysts make in trying to develop a signature for this malware?



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	viii. What set of signatures would detect this malware (and future variants)?
	b. Analyze the malware found in file Lab14-02.exe. This malware has been configured to beacon to a hard-coded loopback address in order to prevent it from harming your system, but imagine that it is a hard-coded external address.
	i. What are the advantages or disadvantages of coding malware to use direct IP addresses?
	ii. Which networking libraries does this malware use? What are the advantages or disadvantages of using these libraries?
	iii. What is the source of the URL that the malware uses for beaconing? What advantages does this source offer?
	iv. Which aspect of the HTTP protocol does the malware leverage to achieve its objectives?
	v. What kind of information is communicated in the malware's initial beacon?
	vi. What are some disadvantages in the design of this malware's communication channels?
	vii. Is the malware's encoding scheme standard?
	viii. How is communication terminated?
	ix. What is the purpose of this malware, and what role might it play in the attacker's arsenal?
	c. This lab builds on Practical 8 a. Imagine that this malware is an attempt by the attacker to improve his techniques. Analyze the malware found in file Lab14-03.exe.
	i. What hard-coded elements are used in the initial beacon? What elements, if any, would make a good signature?
	ii. What elements of the initial beacon may not be conducive to a longlasting signature?
	iii. How does the malware obtain commands? What example from the chapter used a similar methodology? What are the advantages of this technique?
	iv. When the malware receives input, what checks are performed on the input to determine whether it is a valid command? How does the attacker hide the list of commands the malware is searching for?
	v. What type of encoding is used for command arguments? How is it different from Base64, and what advantages or disadvantages does it offer?
	vi. What commands are available to this malware?
	vii. What is the purpose of this malware?
	viii. This chapter introduced the idea of targeting different areas of code with independent signatures (where possible) in order to add resiliency to network indicators. What are some distinct areas of code or configuration data that can be targeted by network signatures?
	ix. What set of signatures should be used for this malware?
	d. Analyze the sample found in the file Lab15-01.exe. This is a command-line program that takes an argument and prints "Good Job!" if the argument matches a secret code.

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	i. What anti-disassembly technique is used in this binary?
	ii. What rogue opcode is the disassembly tricked into disassembling?
	iii. How many times is this technique used?
	iv. What command-line argument will cause the program to print "Good Job!"?
	e. Analyze the malware found in the file Lab15-02.exe. Correct all anti-disassembly countermeasures before analyzing the binary in order to answer the questions.
	i. What URL is initially requested by the program?
	ii. How is the User-Agent generated?
	iii. What does the program look for in the page it initially requests?
	iv. What does the program do with the information it extracts from the page?
	f. Analyze the malware found in the file Lab15-03.exe. At first glance, this binary appears to be a legitimate tool, but it actually contains more functionality than advertised.
	i. How is the malicious code initially called?
	ii. What does the malicious code do?
	iii. What URL does the malware use?
	iv. What filename does the malware use?
9.	a. Analyze the malware found in Lab16-01.exe using a debugger. This is the same malware as Lab09-01.exe, with added anti-debugging techniques.
	i. Which anti-debugging techniques does this malware employ?
	ii. What happens when each anti-debugging technique succeeds?
	iii. How can you get around these anti-debugging techniques?
	iv. How do you manually change the structures checked during runtime?
	v. Which OllyDbg plug-in will protect you from the anti-debugging techniques used by this malware?
	b. Analyze the malware found in Lab16-02.exe using a debugger. The goal of this lab is to figure out the correct password. The malware does not drop a malicious payload.
	i. What happens when you run Lab16-02.exe from the command line?
	ii. What happens when you run Lab16-02.exe and guess the command-line parameter?
	iii. What is the command-line password?
	iv. Load Lab16-02.exe into IDA Pro. Where in the mainfunction is strcmp found?
	v. What happens when you load this malware into OllyDbg using the default settings?
	vii. What is unique about the PE structure of Lab16-02.exe?
	viii. Where is the callback located? (Hint: Use CTRL-E in IDA Pro.)
	ix. Which anti-debugging technique is the program using to terminate immediately in the debugger and how can you avoid this check?

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	x. What is the command-line password you see in the debugger after you disable the anti-debugging technique?
	xi. Does the password found in the debugger work on the command line?
	c. Analyze the malware in Lab16-03.exe using a debugger. This malware is similar to Lab09-02.exe, with certain modifications, including the introduction of anti-debugging techniques.
	i. Which strings do you see when using static analysis on the binary?
	ii. What happens when you run this binary?
	iii. How must you rename the sample in order for it to run properly?
	iv. Which anti-debugging techniques does this malware employ?
	v. For each technique, what does the malware do if it determines it is running in a debugger?
	vi. Why are the anti-debugging techniques successful in this malware?
	vii. What domain name does this malware use?
	d. Analyze the malware found in Lab17-01.exe inside VMware. This is the same malware as Lab07-01.exe, with added anti-VMware techniques.
	i. What anti-VM techniques does this malware use?
	ii. If you have the commercial version of IDA Pro, run the IDA Python script from Listing 17-4 in Chapter 17 (provided here as findAntiVM.py). What does it find?
	iii. What happens when each anti-VM technique succeeds?
	iv. Which of these anti-VM techniques work against your virtual machine?
	v. Why does each anti-VM technique work or fail?
	vi. How could you disable these anti-VM techniques and get the malware to run?
	e. Analyze the malware found in the file Lab17-02.dll inside VMware. After answering the first question in this lab, try to run the installation exports using rundll32.exe and monitor them with a tool like procmon. The following is an example command line for executing the DLL: rundll32.exe Lab17-02.dll,InstallRT (or InstallSA/InstallSB)
	i. What are the exports for this DLL?
	ii. What happens after the attempted installation using rundll32.exe?
	iii. Which files are created and what do they contain?
	iv. What method of anti-VM is in use?
	v. How could you force the malware to install during runtime?
	vi. How could you permanently disable the anti-VM technique?
	vii. How does each installation export function work?
	f. Analyze the malware Lab17-03.exe inside VMware.
	i. What happens when you run this malware in a virtual machine?
	ii. How could you get this malware to run and drop its keylogger?
	iii. Which anti-VM techniques does this malware use?

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	iv. What system changes could you make to permanently avoid the anti-VM techniques used by this malware?
	v. How could you patch the binary in OllyDbg to force the anti-VM techniques to permanently fail?
10.	a. Analyze the file Lab19-01.bin using shellcode_launcher.exe
	i. How is the shellcode encoded?
	ii. Which functions does the shellcode manually import?
	iii. What network host does the shellcode communicate with?
	iv. What filesystem residue does the shellcode leave?
	v. What does the shellcode do?
	b. The file Lab19-02.exe contains a piece of shellcode that will be injected into another process and run. Analyze this file.
	i. What process is injected with the shellcode?
	ii. Where is the shellcode located?
	iii. How is the shellcode encoded?
	iv. Which functions does the shellcode manually import?
	v. What network hosts does the shellcode communicate with?
	vi. What does the shellcode do?
	c. Analyze the file Lab19-03.pdf. If you get stuck and can't find the shellcode, just skip that part of the lab and analyze file Lab19-03_sc.bin using shellcode_launcher.exe.
	i. What exploit is used in this PDF?
	ii. How is the shellcode encoded?
	iii. Which functions does the shellcode manually import?
	iv. What filesystem residue does the shellcode leave?
	v. What does the shellcode do?
	d. The purpose of this first lab is to demonstrate the usage of the thispointer. Analyze the malware in Lab20-01.exe.
	i. Does the function at 0x401040 take any parameters?
	ii. Which URL is used in the call to URLDownloadToFile?
	iii. What does this program do?
	e. Analyze the malware In Lab20-02.exe.
	i. What can you learn from the interesting strings in this program?
	ii. What do the imports tell you about this program?
	iii. What is the purpose of the object created at 0x4011D9? Does it have any virtual functions?
	iv. Which functions could possibly be called by the call [edx] instruction at 0x401349?
	v. How could you easily set up the server that this malware expects in order to fully analyze the malware without connecting it to the Internet?

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vi.	What is the purpose of this program?
vii.	What is the purpose of implementing a virtual function call in this program?
f.	Analyze the malware in Lab20-03.exe.
i.	What can you learn from the interesting strings in this program?
ii.	What do the imports tell you about this program?
iii.	At 0x4036F0, there is a function call that takes the string Config error, followed a few instructions later by a call to CxxThrowException. Does the function take any parameters other than the string? Does the function return anything? What can you tell about this function from the context in which it's used?
iv.	What do the six entries in the switch table at 0x4025C8 do?
v.	What is the purpose of this program?
g.	Analyze the code in Lab21-01.exe
i.	What happens when you run this program without any parameters?
ii.	Depending on your version of IDA Pro, main may not be recognized automatically. How can you identify the call to the main function?
iii.	What is being stored on the stack in the instructions from 0x0000000140001150 to 0x0000000140001161?
iv.	How can you get this program to run its payload without changing the filename of the executable?
v.	Which two strings are being compared by the call to strcmp at 0x0000000140001205?
vi.	Does the function at 0x00000001400013C8 take any parameters?
vii.	How many arguments are passed to the call to CreateProcess at 0x0000000140001093? How do you know?
h.	Analyze the malware found in Lab21-02.exe on both x86 and x64 virtual machines.
i.	What is interesting about the malware's resource sections?
ii.	Is this malware compiled for x64 or x86?
iii.	How does the malware determine the type of environment in which it is running?
iv.	What does this malware do differently in an x64 environment versus an x86 environment?
v.	Which files does the malware drop when running on an x86 machine? Where would you find the file or files?
vi.	Which files does the malware drop when running on an x64 machine? Where would you find the file or files?
vii.	What type of process does the malware launch when run on an x64 system?
viii.	What does the malware do?

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PRINCIPAL

M. Sc (Information Technology)		Semester – III	
Course Name: Offensive Security Practical		Course Code: PSIT3P4d	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	-

List of Practical: to be performed with Kali Linux and Meta-Sploit Framework)

0.	Installation and preparing the lab ready Virtual or physical machine with Kali Linux. Exploring and getting acquainted with the other operating distributions used for offensive security testing mainly <ul style="list-style-type: none"> • Lion Sec • BackBox • Parrot • BlackArch
1.	Exploring the command line arguments
a.	Environment Variables, Tab Completion, Bash History Tricks
b.	Piping and Redirection, Text Searching and Manipulation
c.	Editing Files from the Command Line, Comparing Files, Managing Processes
2.	
a.	Using NETCAT Socat
b.	PowerShell and Powercat
c.	Wireshark and Tcpdump
3.	Passive Information Gathering
a.	Whois Enumeration/ Google Hacking
b.	Netcraft, Recon-ng, Shodan
c.	SSL Server Test
4.	User Information Gathering
a.	Email Harvesting, Password Dumps
b.	Information Gathering Frameworks- OSINT Framework, Maltego
5.	Active Information Gathering
a.	DNS Enumeration
b.	Port Scanning
c.	SMB Enumeration
d.	NFS Enumeration

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6.	Vulnerability Scanning
a.	Vulnerability Scanning with Nessus
b.	Vulnerability Scanning with Nmap
7.	Web Application Assessment Tools
a.	DIRB
b.	Burp Suite
c.	Nikto
d.	SQL Injection
8.	Client-Side Attacks
a.	HTA Attack
b.	Exploiting Microsoft Office
9.	Privilege Escalation
a.	Windows Privilege Escalation
b.	Linux Privilege Escalation
10.	Password Attacks
a.	Wordlists, Brute Force Wordlists
b.	Common Network Service Attack Methods
11.	Port Redirection and Tunneling
a.	Port Forwarding-RINETD
b.	SSH Tunneling
c.	PLINK., NETSH, HTTPTunnel-ing Through Deep Packet Inspection

PRINCIPAL



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UNIVERSITY OF MUMBAI

M. Sc. (Information Technology) Part – II Semester III (Revised CBCS Practical Examination Revised Programme of the Practical Examination, Jan 2023

INSTRUCTION TO CANDIDATES

1. Every student will have to give Practical examination for three papers. The order of papers, date and session will be indicated in the time table. There will be three sessions per day.

Morning Session - I : 9.00 am to 11.00 am.

Afternoon Session - II : 11.15 am to 1.15 pm.

Evening Session - III : 1.45 pm to 3.45 pm.

2. Candidate should be present at the place of their examination at least 20 minutes before the commencement of the examination.
3. Candidate should bring with them their certified ORIGINAL copy of journal / project for all the papers. It should bear your Examination seat number on cover.
4. Candidate will not be allowed to keep any books, notes or papers with them, except writing instruments and ruler at the time of examination.
5. Mobiles or any kind of storage devices such as thumb / pen drives, CD's, floppy disk will not be allowed in the laboratory during examination.
6. Read the question in the practical slip carefully and perform the experiment that is required.
7. If there is anything in the setup of software that you don't know ask the examiner to help you.
8. The program codes as well as the output should be shown to the examiner for verification and assessment. The necessary hard copy of codes / output should be stapled to the answer sheet.
9. The candidate will be examined individually and should not leave the laboratory till they are allowed to do so by the Examiners.

PSIT3P1	Project Documentation and Viva
PSIT3P2a	Applied Artificial Intelligence Practical[AAI]
PSIT3P2b	Computer Vision Practical[CV]
PSIT3P2c	Cloud Application Development Practical[CAD]
PSIT3P2d	Security Breaches and Countermeasures Practical[SBCM]
PSIT3P3a	Machine Learning Practical[ML]
PSIT3P3b	Biomedical Image Processing Practical[BMIP]
PSIT3P3c	Cloud Management Practical[CM]
PSIT3P3d	Malware Analysis Practical[MA]
PSIT3P4a	Robotic Process Automation Practical[RPA]
PSIT3P4b	Virtual Reality and Augmented Reality Practical[VRAR]
PSIT3P4c	Data Center Technologies Practical[DCT]

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PSIT3P4d

Offensive Security Practical[OS]

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M. Sc. (Information Technology) Part – II Semester III (Revised CBCS Practical Examination
Revised Programme of the Practical Examination, Jan 2023

Examination Centre: MAHARASHTRA COLLEGE

(Colleges: MAH, AP, NAVNEET, RDN, WILSON)

Total Students: 106

Date	Session	Paper	Seat No.s				
January 25,2023	I	I (PROJECT)	3270524	3270517	3270514	3270526	3270528
			3270530	3270531	3270529	3270516 (MAH)	
		II	3270522	3270510	3270507	3270519	3270513
			3270523	3270525	3270511	3270512 (MAH)	
		III	3270509	3270508	3270518	3270520	3270521
			3270515 (MAH)		3269566	3269578(AP)	
		IV	3269570	3269580	3269562	3269560	3269576
			3269565	3269558	326958(AP)		
	II	I (PROJECT)	3269575	3269571	3269574	3269559	3269564
			3269579	3269572	3269568	3269569 (AP)	
		II	3269573	3269567	3269577	3269561 (AP) 3270472	
			3270481	3270484	3270470	3270480 (NAVNEET)	
		III	3270479	3270478	3270474	3270482	3270473
			3270477	3270469	3270475	3270468 (NAVNEET)	
		IV	3270483	3270476	3270471 (NAVNEET)		3269647 3269582
			3269583	3269644	3269622 (RDN)		
	III	I (PROJECT)	3269682	3269700	3269679	3269645	3269621
			3269585	3269619	3269586	3269681 (RDN)	
		II	3269620	3269699	3269618	3269701	3269683
			3269584	3269680	3269646	3269617 (RDN)	
III		3270549	3270553	3270552	3270551	3249214	
		3249215	3249216	3249217	3249218 (WILSON)		
IV		3249219	3249220	3249221	3249222	3249223	
		3249224	3249225	3249226	3249227 (WILSON)		
		II	3270524	3270517	3270514	3270526	3270528
			3270530	3270531	3270529	3270516 (MAH)	

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		III	3270522	3270510	3270507	3270519	3270513
	I		3270523	3270525	3270511	3270512 (MAH)	
		IV	3270509	3270508	3270518	3270520	3270521
			3270515 (MAH)		3269566	3269578(AP) 3269563	
		I (PROJECT)	3269570	3269580	3269562	3269560	3269576
			3269565	3269558	3269581 (AP)		
		II	3269575	3269571	3269574	3269559	3269564
			3269579	3269572	3269568	3269569 (AP)	
January 27, 2023	II	III	3269573	3269567	3269577	3269561 (AP) 3270472	
			3270481	3270484	3270470	3270480 (NAVNEET)	
		IV	3270479	3270478	3270474	3270482	3270473
			3270477	3270469	3270475	3270468 (NAVNEET)	
	III	I (PROJECT)	3270483	3270476	3270471 (NAVNEET)		3269647 3269582
			3269583	3269644	3269622 (RDN)		
		II	3269682	3269700	3269679	3269645	3269621
			3269585	3269619	3269586	3269681 (RDN)	
		III	3269620	3269699	3269618	3269701	3269683
			3269584	3269680	3269646 3269617 (RDN)		
		IV	3270549	3270553	3270552	3270551	3249214
			3249215	3249216	3249217	3249218 (WILSON)	
		I (PROJECT)	3249219	3249220	3249221	3249222	3249223
			3249224	3249225	3249226	3249227 (WILSON)	
		III	3270524	3270517	3270514	3270526	3270528
			3270530	3270531	3270529	3270516 (MAH)	
		IV	3270522	3270510	3270507	3270519	3270513
	I		3270523	3270525	3270511	3270512 (MAH)	
		I (PROJECT)	3270509	3270508	3270518	3270520	3270521
			3270515 (MAH)		3269566	3269578(AP)	
			3269563				
		II	3269570	3269580	3269562	3269560	3269576
			3269565	3269558	3269581 (AP)		

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		III	3269575	3269571	3269574	3269559	3269564
			3269579	3269572	3269568	3269569 (AP)	
		IV	3269573	3269567	3269577	3269561 (AP)	3270472
January 28, 2023	II		3270481	3270484	3270470	3270480 (NAVNEET)	
		I (PROJECT)	3270479	3270478	3270474	3270482	3270473
			3270477	3270469	3270475	3270468 (NAVNEET)	
		II	3270483	3270476	3270471 (NAVNEET)	3269647	3269582
			3269583	3269644	3269622 (RDN)		
	III	III	3269682	3269700	3269679	3269645	3269621
			3269585	3269619	3269586	3269681 (RDN)	
		IV	3269620	3269699	3269618	3269701	3269683
			3269584	3269680	3269646	3269617 (RDN)	
		I (PROJECT)	3270549	3270553	3270552	3270551	3249214
			3249215	3249216	3249217	3249218 (WILSON)	
		II	3249219	3249220	3249221	3249222	3249223
			3249224	3249225	3249226	3249227 (WILSON)	
		IV	3270524	3270517	3270514	3270526	3270528
			3270530	3270531	3270529	3270516 (MAH)	
		I (PROJECT)	3270522	3270510	3270507	3270519	3270513
	I		3270523	3270525	3270511	3270512 (MAH)	
		II	3270509	3270508	3270518	3270520	3270521
			3270515 (MAH)	3269563	3269566	3269578 (AP)	
		III	3269570	3269580	3269562	3269560	3269576
			3269565	3269558	3269581 (AP)		
		IV	3269575	3269571	3269574	3269559	3269564
			3269579	3269572	3269568	3269569 (AP)	
		I (PROJECT)	3269573	3269567	3269577	3269561 (AP)	3270472
January 31, 2023	II		3270481	3270484	3270470	3270480 (NAVNEET)	
		II	3270479	3270478	3270474	3270482	3270473
			3270477	3270469	3270475	3270468 (NAVNEET)	
		III	3270483	3270476	3270471 (NAVNEET)	3269647	3269582
			3269583	3269644	3269622 (RDN)		
		IV	3269682	3269700	3269679	3269645	3269621

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			3269585	3269619	3269586	3269681 (RDN)	
		I (PROJECT)	3269620	3269699	3269618	3269701	3269683
			3269584	3269680	3269646	3269617 (RDN)	
	III	II	3270549 3249215	3270553 3249216	3270552 3249217	3270551 3249218 (WILSON)	3249214
		III	3249219 3249224	3249220 3249225	3249221 3249226	3249222 3249227 (WILSON)	3249223




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PRACTICAL SYLLABUS SEMESTER-IV

M. Sc (Information Technology)		Semester – IV	
Course Name: Blockchain Practical		Course Code: PSIT4P1	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	--

List of Practical:	
1.	Write the following programs for Blockchain in Python:
a.	A simple client class that generates the private and public keys by using the built-in Python RSA algorithm and test it.
b.	A transaction class to send and receive money and test it.
c.	Create multiple transactions and display them.
d.	Create a blockchain, a genesis block and execute it.
e.	Create a mining function and test it.
f.	Add blocks to the miner and dump the blockchain.
2.	Install and configure Go Ethereum and the Mist browser. Develop and test a sample application.
3.	Implement and demonstrate the use of the following in Solidity:
a.	Variable, Operators, Loops, Decision Making, Strings, Arrays, Enums, Structs, Mappings, Conversions, Ether Units, Special Variables.
b.	Functions, Function Modifiers, View functions, Pure Functions, Fallback Function, Function Overloading, Mathematical functions, Cryptographic functions.
4.	Implement and demonstrate the use of the following in Solidity:
a.	Withdrawal Pattern, Restricted Access.
b.	Contracts, Inheritance, Constructors, Abstract Contracts, Interfaces.
c.	Libraries, Assembly, Events, Error handling.
5.	Install hyperledger fabric and composer. Deploy and execute the application.
6.	Write a program to demonstrate mining of Ether.
7.	Demonstrate the running of the blockchain node.
8.	Demonstrate the use of Bitcoin Core API.
9.	Create your own blockchain and demonstrate its use.
10.	Build Dapps with angular.

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M. Sc (Information Technology)		Semester – IV	
Course Name: Cyber Forensics Practical		Course Code: PSIT4P2d	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	-

List of Practical:

1.	File System Analysis using The SleuthKit (Autopsy, fsstat, istat, fls and img_stat)
2.	a. Explore Windows forensic tools (OSForensics) b. Forensics Investigation Using Encase c. Using Mobile Forensics software tools d. Exploring Moleedit Forensics
3.	Using Forensic Toolkit(FTK) & Writing report using FTK (AccessData FTK)
4.	a. Using File Recovery Tools [FTK Imager] Creating Image b. Recover Deleted files using Recuva, PC Inspector File Recovery, Recover My Files, R Studio
5.	a. Using Web attack detection tools [Wireshark] b. Using Log & Traffic Capturing & Analysis Tools [Wireshark] c. Using Network Forensic Analysis Tool (NetworkMiner) d. Using Network Traffic Analyser tool Iris
6.	Dump Memory contents using PMdump
7.	Using Data Acquisition Tools [ProDiscover Pro]
8.	a. Using Steganography Tools [S-Tools] b. Using Whitespace Steganography tool SNOW
9.	a. Performing Password Cracking [Cain & Abel] b. Performing Sniffing [Cain & Abel]
10.	a. Managing Remote Registry, Network Enumeration, Services, s. IDs [Cain & Abel] b. Scan Registry using RegScanner c. Study Registry Viewer tool (Alien Registry Viewer)

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M. Sc (Information Technology)		Semester – IV	
Course Name: Deep Learning Practical		Course Code: PSIT4P3a	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	--

List of Practical:	
1.	Performing matrix multiplication and finding eigen vectors and eigen values using TensorFlow
2.	Solving XOR problem using deep feed forward network.
3.	Implementing deep neural network for performing binary classification task.
4.	a) Using deep feed forward network with two hidden layers for performing multiclass classification and predicting the class. b) Using a deep feed forward network with two hidden layers for performing classification and predicting the probability of class. c) Using a deep feed forward network with two hidden layers for performing linear regression and predicting values.
5.	a) Evaluating feed forward deep network for regression using KFold cross validation. b) Evaluating feed forward deep network for multiclass Classification using KFold cross-validation.
6.	Implementing regularization to avoid overfitting in binary classification.
7.	Demonstrate recurrent neural network that learns to perform sequence analysis for stock price.
8.	Performing encoding and decoding of images using deep autoencoder.
9.	Implementation of convolutional neural network to predict numbers from number images
10.	Denoising of images using autoencoder.

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M. Sc (Information Technology)		Semester – IV	
Course Name: Project Implementation and Viva		Course Code: PSIT4P4	
Periods per week (1 Period is 60 minutes)		4	
Credits		2	
		Hours	Marks
Evaluation System	Practical Examination	2	50
	Internal	--	--

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UNIVERSITY OF MUMBAI

M. Sc. (Information Technology) Part –II Semester IV CBCS Practical Examination Programme of the Practical Examination, June 2023

INSTRUCTION TO CANDIDATES

1. Every student will have to give Practical examination for three papers. The order of papers, date and session will be indicated in the time table. There will be three sessions per day.

Morning Session - I : 9.00 am to 11.00 am.

Afternoon Session - II : 11.15 am to 1.15 pm.

Evening Session - III : 1:45 pm to 3:45 pm

2. Candidate should be present at the place of their examination at least 20 minutes before the commencement of the examination.
3. Candidate should bring with them their certified ORIGINAL copy of journal / project for all the papers. It should bear your Examination seat number on cover.
4. Candidate will not be allowed to keep any books, notes or papers with them, except writing instruments and ruler at the time of examination.
5. Mobiles or any kind of storage devices such as thumb / pen drives, CD's, floppy disk will not be allowed in the laboratory during examination.
6. Read the question in the practical slip carefully and perform the experiment that is required.
7. If there is anything in the setup of software that you don't know ask the examiner to help you.
8. The program codes as well as the output should be shown to the examiner for verification and assessment. The necessary hard copy of codes / output should be stapled to the answer sheet.
9. The candidate will be examined individually and should not leave the laboratory till they are allowed to do so by the Examiners.

PSIT4P1	Block chain Practical
PSIT4P2a	Natural Language Processing Practical
PSIT4P2b	Digital Image Forensics Practical
PSIT4P2c	Advanced IoT Practical
PSIT402d	Cyber Forensics Practical
PSIT4P3a	Deep Learning Practical
PSIT403b	Remote Sensing Practical
PSIT403c	Server Virtualization on VMWare Platform Practical

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PSIT403d	Security Operations Center Practical
PSIT4P4	Project Implementation and Viva

UNIVERSITY OF MUMBAI

**M. Sc. (Information Technology) Part –II Semester IV CBCS Practical Examination
Programme of the Practical Examination, June 2023**

Examination Centre: MAHARASHTRA COLLEGE

(Colleges: MAH, AP, NAVNEET, RDN, WILSON)

Total Students:

Date	Session	Paper	Seat No.s
July 06 2023	I	I	4135463 4135460 4135493 4135491 4135455 4135492 4135486 (MAH) 4135480 4135439 (WILSON)
		II	4135494 4135464 4135487 4135485 4135462 4135495 4135459 (MAH) 4135510 4135474 (WILSON)
		III	4135515 4135488 4135516 4135458 4135457 4135456 4135514 (MAH) 4135443 4135438 (WILSON)
		IV (Project)	4135490 4135489 4135461 (MAH) 4135444 4135446 4135445 4135479 4135476 4135509 (WILSON)
	II	I	4135447 4135442 4135448 4135477 4135451 4135481 (WILSON) 4135469 4135472 4135508 (AP)
		II	4135500 4135518 4135468 4135466 4135506 4135471 4135465 4135519 4135505 (AP)
		III	4135501 4135504 4135496 4135470 4135517 4135502 4135498 4135499 4135503 (AP)
		IV (PROJECT)	4135497 4135507 4135467 (AP) 4135453 4135475 4135452 4135449 4135511 4135473 (NAVNEET)
	III	I	4135483 4135482 4135512 4135441 4135437 4135450 4135484 4135478 4135513 (NAVNEET)
		II	4135440 4135454 (NAVNEET) 4135523 4135584 4135585 4135520 4135624 4135628 (RDN)
		III	4135556 4135625 4135521 4135623 4135587 4135621 4135588 4135627 4135622 (RDN)
		IV (PROJECT)	4135555 4135620 4135557 4135629 4135586 4135626 4135522 4135619 (RDN)
I	II	4135463 4135460 4135493 4135491 4135455 4135492 4135486 (MAH) 4135480 4135439 (WILSON)	
	III	4135494 4135464 4135487 4135485 4135462 4135495 4135459 (MAH) 4135510 4135474 (WILSON)	
	IV (Project)	4135515 4135488 4135516 4135458 4135457 4135456 4135514 (MAH) 4135443 4135438 (WILSON)	
	I	4135490 4135489 4135461 (MAH) 4135444 4135446 4135445 4135479 4135476 4135509 (WILSON)	
	II	4135447 4135442 4135448 4135477 4135451 4135481	

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July 07 2023	II	III	(WILSON) 4135469 4135472 4135508 (AP) 4135500 4135518 4135468 4135466 4135506 4135471 4135465 4135519 4135505 (AP)
		IV (Project)	4135501 4135504 4135496 4135470 4135517 4135502 4135498 41354994135503 (AP)
	III	I	4135497 4135507 4135467 (AP) 4135453 4135475 4135452 4135449 41355114135473 (NAVNEET)
		II	4135483 4135482 4135512 4135441 4135437 4135450 4135484 4135478 4135513 (NAVNEET)
		III	4135440 4135454 (NAVNEET) 4135523 4135584 4135585 4135520 4135624 4135628 (RDN)
		IV (Project)	4135556 4135625 4135521 4135623 4135587 4135621 4135588 4135627 4135622 (RDN)
		I	4135555 4135620 4135557 4135629 4135586 4135626 4135522 4135619 (RDN)
		III	4135463 4135460 4135493 4135491 4135455 4135492 4135486 (MAH) 4135480 4135439 (WILSON)
		IV (Project)	4135494 4135464 4135487 4135485 4135462 4135495 4135459 (MAH) 4135510 4135474 (WILSON)
		I	4135515 4135488 4135516 4135458 4135457 4135456 4135514 (MAH) 4135443 4135438 (WILSON)
		II	4135490 4135489 4135461 (MAH) 4135444 4135446 4135445 4135479 4135476 4135509 (WILSON)
		III	4135447 4135442 4135448 4135477 4135451 4135481 (WILSON) 4135469 4135472 4135508 (AP)
		IV (Project)	4135500 4135518 4135468 4135466 4135506 4135471 4135465 4135519 4135505 (AP)
		I	4135501 4135504 4135496 4135470 4135517 4135502 4135498 4135499 4135503 (AP)
		II	4135497 4135507 4135467 (AP) 4135453 4135475 4135452 4135449 4135511 4135473 (NAVNEET)
		III	4135483 4135482 4135512 4135441 4135437 4135450 4135484 4135478 4135513 (NAVNEET)
		IV (Project)	4135440 4135454 (NAVNEET) 4135523 4135584 4135585 4135520 4135624 4135628 (RDN)
		I	4135556 4135625 4135521 4135623 4135587 4135621 4135588 4135627 4135622 (RDN)
		II	4135555 4135620 4135557 4135629 4135586 4135626 4135522 4135619 (RDN)
		IV (Project)	4135463 4135460 4135493 4135491 4135455 4135492 4135486 (MAH) 4135480 4135439 (WILSON)
		I	4135494 4135464 4135487 4135485 4135462 4135495 4135459 (MAH) 4135510 4135474 (WILSON)
		II	4135515 4135488 4135516 4135458 4135457 4135456 4135514 (MAH) 4135443 4135438 (WILSON)
		III	4135490 4135489 4135461 (MAH) 4135444 4135446 4135445 4135479 4135476 4135509 (WILSON)
		IV (Project)	4135447 4135442 4135448 4135477 4135451 4135481 (WILSON) 4135469 4135472 4135508 (AP)

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I	4135500 4135518 4135468 4135466 4135506 4135471 4135465 4135519 4135505 (AP)
II	4135501 4135504 4135496 4135470 4135517 4135502 4135498 4135499 4135503 (AP)
III	4135497 4135507 4135467 (AP) 4135453 4135475 4135452 4135449 4135511 4135473 (NAVNEET)
IV (Project)	4135483 4135482 4135512 4135441 4135437 4135450 4135484 4135478 4135513 (NAVNEET)
I	4135440 4135454 (NAVNEET) 4135523 4135584 4135585 4135520 4135624 4135628 (RDN)
II	4135556 4135625 4135521 4135623 4135587 4135621 4135588 4135627 4135622 (RDN)
III	4135555 4135620 4135557 4135629 4135586 4135626 4135522 4135619 (RDN)

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Practical Evaluation (50 marks)

A Certified copy of hard-bound journal is essential to appear for the practical examination.

1.	Practical Question 1	20
2.	Practical Question 2	20
3.	Journal	5
4.	Viva Voce	5

OR

1.	Practical Question	40
2.	Journal	5
3.	Viva Voce	5

Project Documentation and Viva Voce Evaluation

The documentation should be checked for plagiarism and as per UGC guidelines, should be less than 10%.

1.	Documentation Report (Chapter 1 to 4)	20
2.	Innovation in the topic	10
3.	Documentation/Topic presentation and viva voce	20

Project Implementation and Viva Voce Evaluation

1.	Documentation Report (Chapter 5 to last)	20
2.	Implementation	10
3.	Relevance of the topic	10
4.	Viva Voce	10

Project Documentation and Viva-voce (Semester III) and Project Implementation and Viva-Voce (Semester IV)

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Report on Use of IT by College Teachers in Teaching-Learning Process



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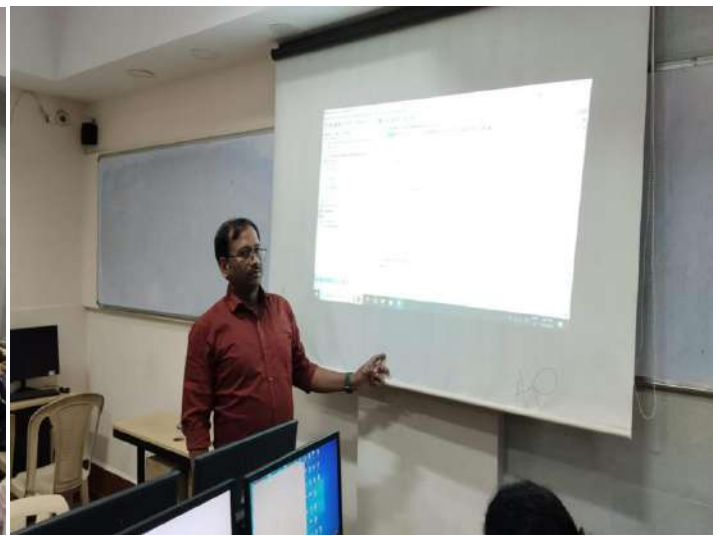
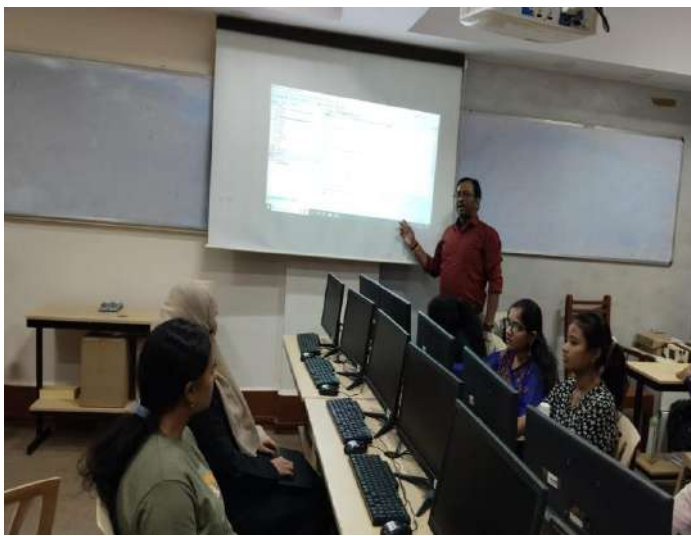
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Use of IT by Faculty in Teaching Learning Process

Name of Faculty: Satyendra Pal

Keeping in mind the multiple intelligence theories pertaining to the holistic development of the Learner/s – we follow different pedagogies for them from time to time as and when required.



You Tube Link	https://www.youtube.com/watch?v=pcKY4hjDrxk
	https://www.youtube.com/watch?v=UxXasZyx0Z0
	https://www.youtube.com/watch?v=oV74Najm6Nc
	https://www.youtube.com/@appflixeducation5824
Google Classroom	https://classroom.google.com/c/MTM5Mjl5MDYyNTE5
	https://classroom.google.com/u/1/
PPT	https://drive.google.com/drive/folders/10aA3xTwwEE0rVGb5EZnjChJWtSnYuJla
	https://drive.google.com/drive/u/1/folders/1cl1HThPzliyIfcPMoySKK5-uCkVEsIHu

Online Exam Link for Students: [ps://https://classroom.google.com/](https://classroom.google.com/)

<https://nightdegreebeta.acadmin.in/OnlineStudent>

637563208437607288

12:58 pm

HeBudhol

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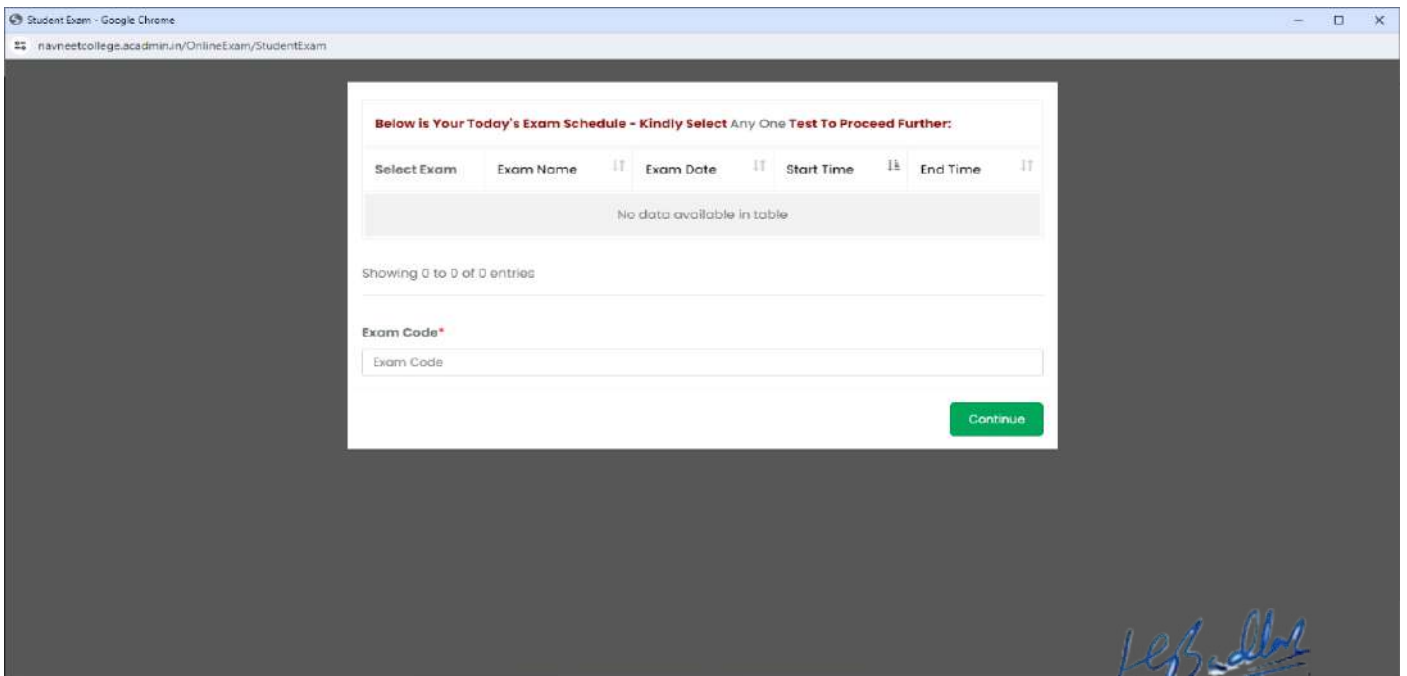
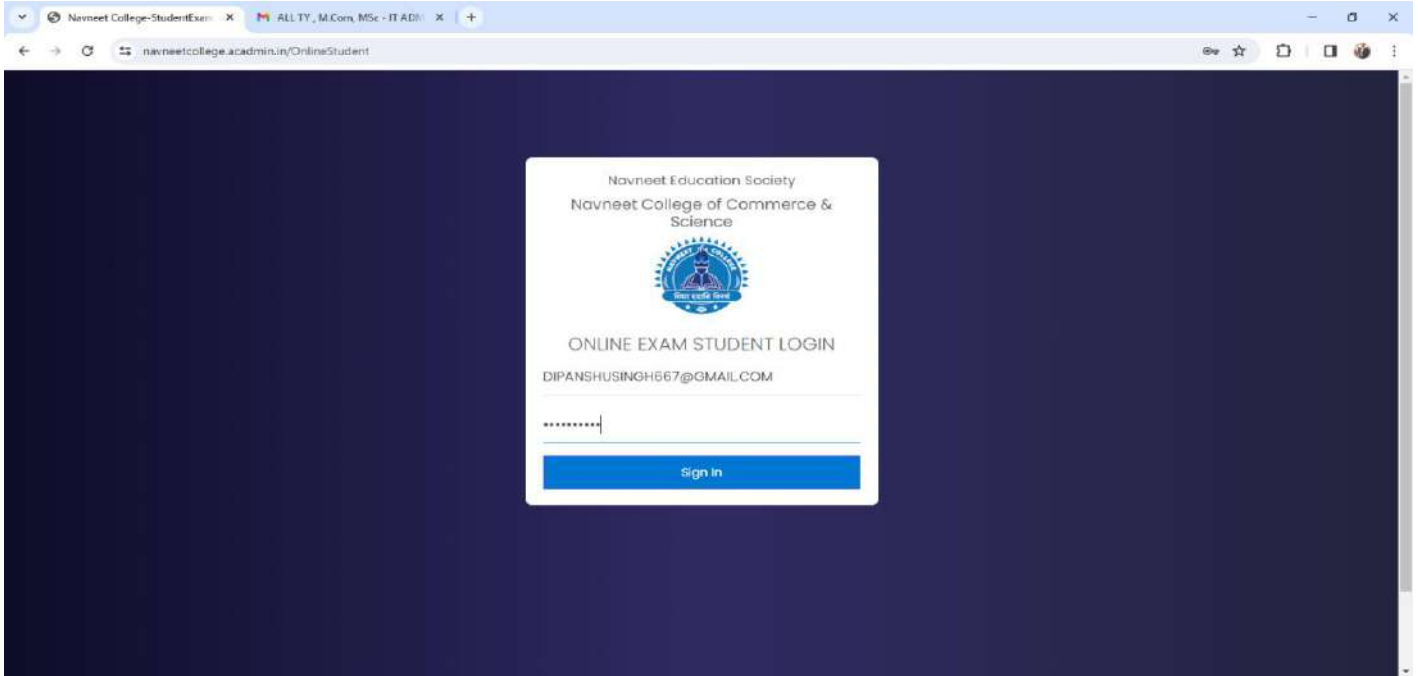


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Interface of Online Examination Portal for Students:



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Interface of Google Classrooms created by the Faculty:

The screenshot shows a Google Classroom interface for the course 'FYBScIT 2021-2022'. The left sidebar lists various classes, with 'FYBScIT 2021-2022' selected. The main content area features the Navneet College logo and the course title. Below the header, the class code is '4htlsnu'. There is a notification from 'SATYENDRA PAL' posted on Feb 16, 2022, regarding 'web programming Notes'. The interface also includes a 'Stream' tab, 'Classwork', 'People', and 'Grades' sections.

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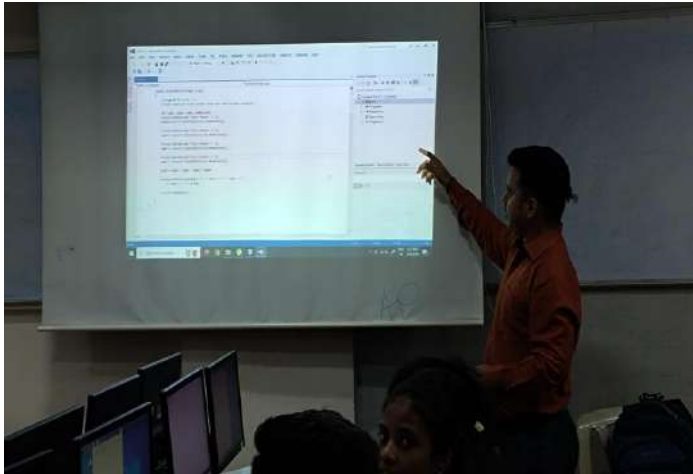
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Name of Faculty: Harishankar Mishra

Implementation of Interactive and Participative classroom and its importance in Student Centric Teaching Methodology



<p>YouTube Links</p>	<p>https://www.youtube.com/watch?v=kAqPb2e9bwc https://www.youtube.com/watch?v=iK4BmQY70uc&list=PLUWdEQb_2yqUaFAwNiYIh-KlnxWQiJQXJ https://www.youtube.com/watch?v=fwzYuhduME4&list=PL338D19C40D6D1732 https://www.youtube.com/watch?v=h-1_Dio6x0s https://www.youtube.com/watch?v=OuzlMPbx78k</p>
<p>Google Class Room</p>	<p>https://classroom.google.com/c/MTM5Mjl4MjkzMzAy</p>
<p>PPTs</p>	<p>https://docs.google.com/presentation/d/1Z-RAB8llpKPzsl-YyfZzXtsZ_pJh6UNb/edit?usp=drive_link&oid=109125596780497501186&rtpof=true&sd=true https://drive.google.com/drive/folders/0BxX8NgbJgbVnOWg0cmJEd0Q1aU0?resourcekey=0-h7klioLGU1Z5M4LCIWEyOA&usp=drive_link https://drive.google.com/drive/folders/0BxX8NgbJgbVnOWg0cmJEd0Q1aU0?resourcekey=0-h7klioLGU1Z5M4LCIWEyOA&usp=drive_link&oid=109125596780497501186&rtpof=true&sd=true</p>

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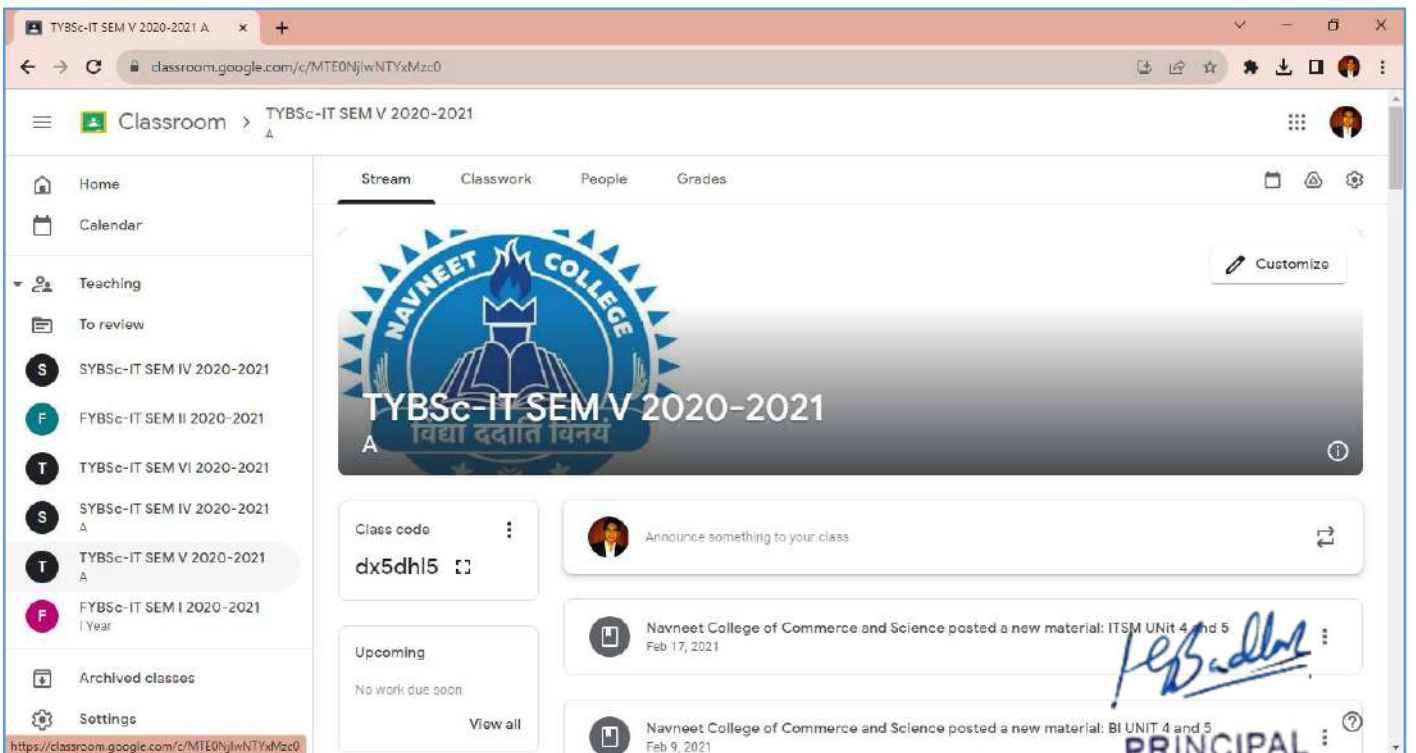
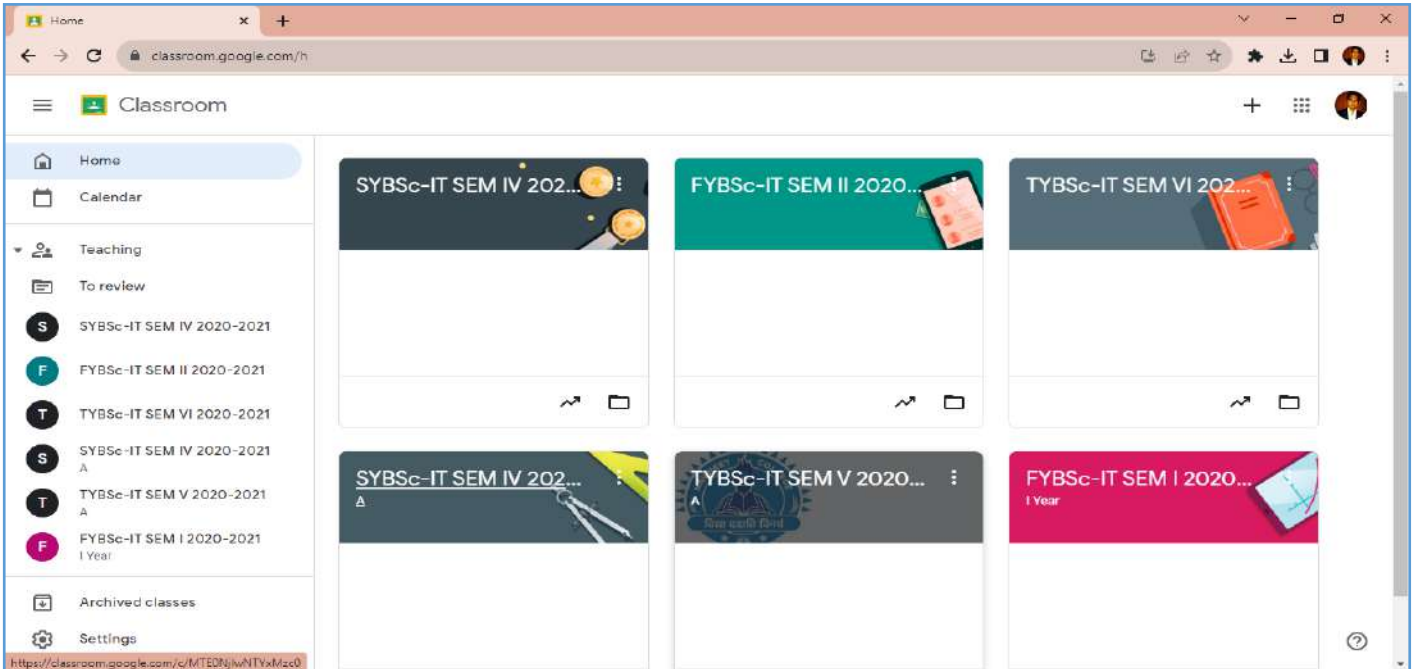


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Interface of Google Classrooms created by the Faculty:



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Online Teaching Methodologies used by the Faculty:

The screenshot shows a Zoom meeting interface. On the left, a presentation slide is displayed with the following content:

```
public:
    void display(void)
    {
        cout << "Class N\n";
    }
};
```

Which **display()** function is used by the derived class when we inherit these two classes?
We can solve this problem by defining a named instance within the derived class, using the class resolution operator with the function as shown below:

```
class P : public M, public N
```

Copyrighted material

On the right, a grid of participants is visible, including Harishankar Mishra, YASHRAV SURVE, Dhiraj Upadhyay, Harishankar Mishra, Yukta Nair, Siddharth Singh, Anurupa Kamble, and You.

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Faculty Name: Krishnakumar Sharma

Keeping in mind the multiple intelligence theories pertaining to the holistic development of the Learner/s – we follow different pedagogies for them from time to time as and when required.

You tube Link	https://www.youtube.com/watch?v=JFF2vJaN0Cw&list=PLxCzCOWd7aiGFBD2-2joCpWOLUrDLvVV https://www.youtube.com/watch?v=-MK04crExYw&list=PL9WUFDdtaj64BqUYzRO81FEnZqOrRen0M
PPT	https://drive.google.com/drive/u/1/folders/1bgNiNg47q2S2K96FmtiJ4s9hYaWnOh_J

Google Meet Link for lectures

Prof krishna kumar sharma
SiC
Tuesday, Mar 30 • 11:00 AM – 12:00 PM
Google Meet joining info
Video call link: <https://meet.google.com/ryy-tmmv-mjm> 1:03 pm

Subject : Principles of GIS.
Date : 31/3/2021
Time: 9:00 am to 10:00 am
Meeting URL: <https://meet.google.com/dpf-nsuw-kdn> 1:03 pm

➔ Forwarded
Prof Bhupinder Singh
Sub SQA
Date 10/04/21
Time 10.30am to 11.30am
Meeting URL: <https://meet.google.com/cxd-wcxv-gdy> 1:03 pm

➔ Forwarded
Business Intelligence Practical
Time : 10 am
Date: 24/04/2021

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Faculty Name: Jitendra Kumar Mishra

Youtube Educational Channel	https://www.youtube.com/watch?v=w-bv4rO6Vos
PPT Link	https://drive.google.com/drive/u/0/folders/1saYR9UqckG8Y8niqx3KpkAeCa5H4tZcv

Youtube Educational Channel of Jitendra Kumar Mishra:

Jitendra Mishra



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Real-time meetings by Google. Using your browser, share your video, desktop, and presentations with teammates and customers.
meet.google.com

To join the meeting on Google Meet, click this link:
<https://meet.google.com/iwq-opoq-wdj>
Prof. JITENDRA KUMAR MISHRA
SUB. COST ACCOUNTING
TIME. 9.30 TO. 11.30
Or open Meet and enter this code: iwq-opoq-wdj


7:11 pm

Jitendra Mishra



##WORKING CAPITAL REQUIREMENTS.###

Jitendra Mishra



Meet
Real-time meetings by Google. Using your browser, share your video, desktop, and presentations with teammates and customers.
meet.google.com

To join the meeting on Google Meet, click this link:
<https://meet.google.com/kfo-feei-obu>

Or open Meet and enter this code: kfo-feei-obu
Financial Accounting
Time 8.50 to 9.40

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Faculty Name: Payal Parekh

You Tube Link	https://www.youtube.com/watch?v=DJTejfmSTbl
	https://www.youtube.com/watch?v=ekdM7dYQWvs
	https://youtu.be/aHzlAgbagU4
	https://youtu.be/gWN5G4qDg58
	https://youtu.be/IMbNNx4jDx4
	https://www.youtube.com/watch?v=FMTAJB7Rmks

FYBcom module 3 Sem 2 Business process outsourcing

Business Process Outsourcing II FYBCOM II SEM 2II MODULE 3
HI students todays VLOG is about Business Process Outsourcing. Advantages of BPO are: 1) Focus on core Activities 2) Reduction in Operational Costs 3) Lower Investm...
www.youtube.com

<https://www.youtube.com/watch?v=DJTejfmSTbl> 3:25 pm

FYBcom Module 3 Sem 2 legal process outsourcing

Legal process Outsourcing II FYBCOM II SEM 2
HI, students todays VLOG is about LPO, its scope and the reasons.. Hope the concept has become relatively easier. well examples makes the concept very...
www.youtube.com

<https://www.youtube.com/watch?v=qwYjgRgM4iU> 3:25 pm

<https://www.youtube.com/watch?v=lmLQG2sfSFo> 3:25 pm

<https://www.youtube.com/watch?v=4GluF94SHMk> 3:25 pm

<https://www.youtube.com/watch?v=oWquX4MWgiU> 3:25 pm

<https://www.youtube.com/watch?v=DWfMQVc0Zj8> 3:25 pm

<https://www.youtube.com/watch?v=dU229ps2Tdc> 3:25 pm

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Faculty Name: **Manasi Bhagat**

You tube Link:	https://youtu.be/DwMfV8ymb28?si=fTBQtwroVUnPXHp0 https://youtu.be/M5UaOhFtrr0?si=JeiJgeBoswQ4mdSO https://youtu.be/_6l580msvY8?si=g-RpMdQcZJXQqaF-
-----------------------	---

20.12.2021
Foundation course
10:30-11:30
Mrs. Manasi Bhagat
meet.google.com/vec-oawg-ikd 3:42 pm

**F.Y.B.Com, B.A., B.Sc.,
F.Y.B.M.S., B.A.F., B.B.I., B.F.M.** **Part 1**
Semester - 1
Foundation Course - 1
Chapter 1
Overview of Indian Society
The main characteristics of Indian culture Society
Navneet Shaikh Miss
YouTube
F.Y.B.COM || Foundation Course 1 || Semester 1 | Chapter 1 | Overview of Indian Society |...
F.Y.B.COM, B.A., F.Y.B.M.S., B.A.F., B.B.I., B.F.M. ||
youtube.com
<https://youtu.be/DwMfV8ymb28?si=fTBQtwroVUnPXHp0> 4:25 pm

SY. Bcom, BMS, BBI, Bsc, BFM...
Foundation Course
Important Questions
Sem-IV
YouTube
Important Questions Foundation Course sem 4 ||
You can follow me on instagram :-
youtube.com
<https://youtu.be/M5UaOhFtrr0?si=JeiJgeBoswQ4mdSO> 4:26 pm

Foundation Course-2
-Impact of Globalisation on:
Employment & Agriculture
Liberalisation and Privatisation
-Corporate Farming
Mumbai University
Lecture - 3
YouTube
Foundation Course Sem 2 | Globalization and Indian Society | Mumbai University
globalization, privatisation, liberalisation, fybcom
youtube.com

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https://youtu.be/_6l580msvY8?si=g-RpMdQcZJXQqaF- 4:26 pm

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Faculty Name: **Smruti Vasavada**

You Tube link	https://youtu.be/DOmrm0Hy-2Y?si=xTEffnBGheudBvPq
	https://youtu.be/JKVb4Poi5d4?si=2trfQdkhywEFBxy3
	https://youtu.be/QGHBq5OEsBM?si=m3o8ZWzGMvwoyHNL
PPT	https://drive.google.com/drive/u/0/folders/1YUzOPCAdxPk6HPcsi-U_707VqFrQoeKH

Faculty Name: **Vijay Narayan Singh**

You Tube link	https://www.youtube.com/watch?v=6PEfag1o3eo
	https://www.youtube.com/watch?v=K5qc6iFbw6w
	https://www.youtube.com/watch?v=tgax3mNXtis
	https://www.youtube.com/watch?v=ZLCijs109tw
	https://www.youtube.com/watch?v=MoUoEPPcXGA
PPT	https://docs.google.com/presentation/d/19wV5sbUMYLBPxUcQ_gl-Sfp6LLQHvNi_/edit?usp=drive_link&ouid=108210018906339394288&rtpof=true&sd=true



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