



MOHAMED SATHAK A J COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)

Siruseri IT Park, Egattur, Chennai - 603 103

2.3.2

S.No	Content	Page no.
1.	Internet bill	02
2.	Photograph (LCD, Video Conference, Smart Class, TV), Seminar hall photo	03-06
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4.	College Membership <ul style="list-style-type: none">• NPTEL• Delnet screen shot• SHODHGANGA• NDL	10-25
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PRINCIPAL
MOHAMED SATHAK A.J.COLLEGE OF ENGINEERING
34, Rajiv Gandhi Road (OMR), Siruseri, IT Park
Chennai-603 103.

INVOICE

Billing Address : MOHAMED SATHAK A.J COLLEGE OF ENGINEERING 34, Rajiv Gandhi Salai, OMR, Siruseri IT Park, Siruseri, Chennai 603103 Contact No : 9941344444 Mail : khalid@eternaautomation.com	Invoice No OPTCPL-ILL-8634 Invoice Date 09 Jan 2022 Due Date 09 Jan 2022 Billing Period 01 Jan 2022 to 31 Mar 2022 User Name MSEC CHENNAI Plan Name 1=1 LEASED LINE 100 Mbps customer Type Business
---	--

Previous A	Payments B	Adjustments C	Balance amt D=A-(B+C)	Current Bill E	Amount Payable F=D+E	Other Payments
Rs. 77880.00	Rs. 0.00	Rs. 0.00	Rs. 77880.00	Rs. 155760.00	Rs. 233640.00	0.00

S:No	Particular	HSN/SAC	Amount
1	Internet Leased Line 1=1 100 Mbps	99842	Rs. 132000.00
Sub Total			Rs. 132000.00
CGST			9.00% Rs. 11880.00
SGST			9.00% Rs. 11880.00
Grand Total			Rs. 155760.00

Late Fee shall be levied in the next bill @ 2% of the outstanding amount after payment due to date. Min late fee is Rs.10

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Name: MOHAMED SATHAK A.J COLLEGE OF
 User Name: MSEC CHENNAI
 Invoice No: OPTCPL-ILL-8634
 Invoice Date: 09 Jan 2022
 Due Date: 09 Jan 2022
 Billing Period: 01 Jan 2022 to 08 Jan 2022
 Amt due Rs.: Rs. 233640.00

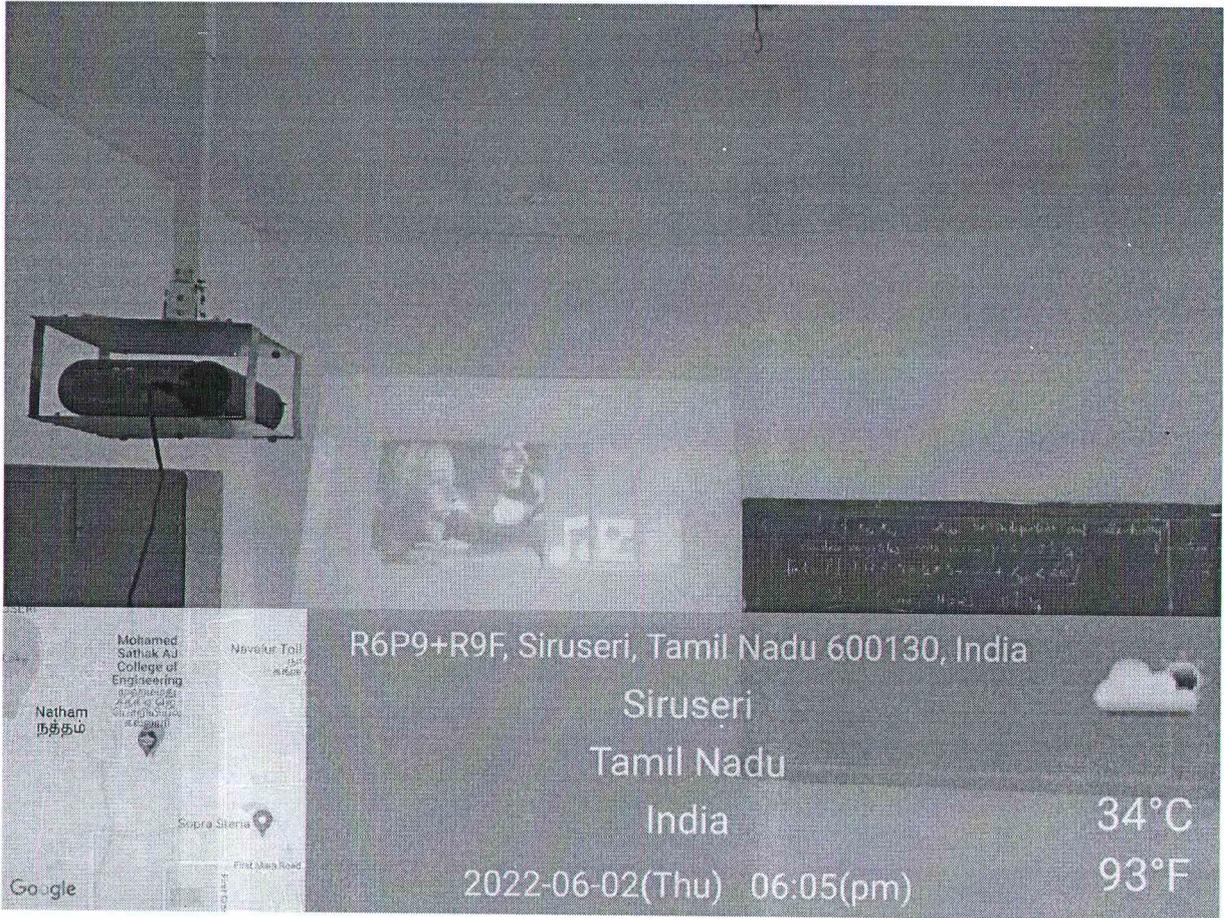


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LCD Projector in Class Room

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meet.google.com/yqd-krzu-pnn

REC Dr. B. Janarthanan is presenting

Types of learning

Deductive ✓ Ohm's

Generalization (or Rule) → Specific Examples or Activities

Inductive ✓

Specific Examples or Activities → Generalization (or Rule)

Figure 1. Deductive and Inductive Learning adapted from: <http://www.sakshid.gov.uk.ca/docs/policy/approach/instapp05.html>

While teaching a new mathematics concept, the instructor will first explain the rules. Then, they will provide examples to support it

Inductive learning, also known as discovery learning, is a process where the learner discovers rules by observing examples

Ohm's law: The voltage across a conductor is directly proportional to the current flowing through it.
 $V = IR$

$V \propto I$

\downarrow

R

\downarrow

I

\downarrow

V

Dr. B. Janarth...

Ibrahim M...

4016 MOHAM...

4304 Mohamm...

4004 BALAJI J

Basit Abdul

Dr.G.RAMESH ...

Mr Hiklum

Westin D

EEE 05 IMRAN.R

35 others

You

2:23 PM | yqd-krzu-pnn

14:23 14-12-2021

meet.google.com/yqd-krzu-pnn

REC Dr. B. Janarthanan is presenting

Smart India Hackathon

- Started in 2017 by GoI (MoE) in collaboration with AICTE
- Compete amongst one another as a team, offer technical solutions to real-world problems and get a chance to win prizes worth up to Rs. 1,00,000.
- Smart India Hackathon is a nationwide initiative to provide students a platform to solve some of the pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem solving.
- The first five editions SIH2017, SIH2018, SIH2019 and SIH2020, SIH2021 proved to be extremely successful in promoting innovation out-of-the-box thinking in young minds, especially engineering students from across India.

Dr. B. Janarth...

Ibrahim M...

4016 MOHAM...

4304 Mohamm...

4004 BALAJI J

Basit Abdul

Dr.G.RAMESH ...

Mr Hiklum

Shanmuharaja...

EEE 05 IMRAN.R

36 others

You

2:24 PM | yqd-krzu-pnn

14:24 14-12-2021

Video Conference



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Auditorium


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Seminar Hall

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DEPARTMENT OF INFORMATION TECHNOLOGY

LIST OF CHARTS		LABORATORY LIST
1	Network topology Diagram	CENTRE FOR CISCO NETWORKING
2	Network Diagram Multi-office connection using IPsec VPN	
3	Routing WAN & NETWORK management Icons	
4	Cisco intent based networking for the the WAN	
5	Cyper security predictions	
6	Network diagrams	
7	What is a VPN	
8	Cyper threats and Empowering	
9	WAN Definition	
12	What is Cloud Computing	CLOUD COMPUTING LABORATORY
13	Task based education and problem solving	
14	Cloud computing networks	
15	Cloud adoption	
16	A survey of mobile cloud computing	
17	Cloud storage	PROJECT LABORATORY
18	A layered technology	
19	Process framework activities	
20	SDLC models	
21	V-models	
22	Agile model	COMPUTER CENTRE LABORATORY
23	Computer basic	
24	Basic operations of OS algorithms	
25	Real world applications of C	
26	Scheduling algorithm in OS	
27	Structured programming Language vs object oriented programming languages	CASE TOOLS LABORATORY
28	Types of UML Diagram	
29	What are usecases	
30	Class diagram	
31	Sequence diagram	

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Routing WAN and Network Management Icons



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Router



Wireless Router



Layer 2 Switch



Broadband Router



Router, Subdued



Router+Silicon Switch



Wavelength Router



NetFlow Router



uBR910



DPT



Switch ATM tag Router



ATM tag Switch Route



ATM Router



Cisco 7505



Cisco 7507



Cisco 7507 ARS (7513)



Voice-enabled Router



TDM Router



IP telephony Router



IAD Router



Content Service Router



Storage Router



Router with Firewall



ASR 1000 Series



ATM 3800



AXP



Cable modem



Ground Terminal



CSU/DSU



WAN



MUX



PBX Switch



Hub



NAT



Cloud



Distributed Director



PBX



Local Director



Laptop



PC Router card



Workstation



Terminal



Web Server



Set-top box (STB)



Phone

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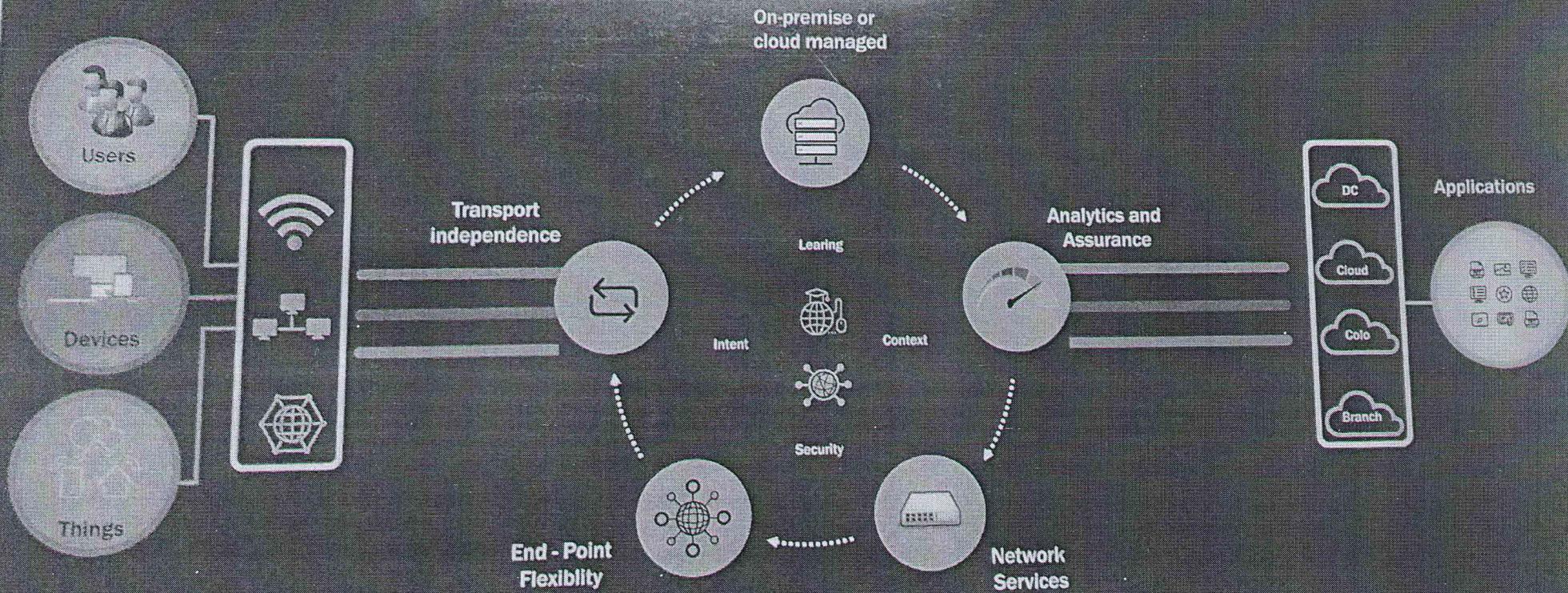
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Cisco Intent - based networking for the WAN



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SPOC Change Request Letter

Ref No: MSAJCE/PRL/NPTEL/001/2019-20

Date: 19-11-2019

To,

Prof. Andrew Thangaraj,
NPTEL Coordinator,
NPTEL, 3rd floor, IC&SR
IIT Madras
Chennai – 600036

Subject: Request for Change of SPOC

We kindly request you to accept our change of SPOC for our college **MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING**

Details of Current SPOC

Name: T.A. ANNIE

Mobile number: 8072138874

Email id: nptelspocmsajce@gmail.com

We nominate **Dr.E.Dhiravidachelvi** as the Single Point of Contact (SPOC), whose details are as follows:

Name: Dr.E.Dhiravidachelvi

Designation: PROFESSOR

Department: ELECTRONICS & COMMUNICATION ENGINEERING

Email id: nptelspocmsajce@gmail.com

Mobile No: 9442046457

We request that you kindly update your database accordingly.

Thank you.

Warm regards


Dr.K.S.Srinivasan

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Siruseri, Chennai - 603 103

No:34, Rajiv Gandhi Road (OMR), IT Highway, Inside SIPCOT IT Park, Siruseri, Chennai - 603 103.

044-2747 0024 2740 2070 044-2747 0022

MSAJCE

NATIONAL PROGRAMME ON TECHNOLOGY ENHANCED LEARNING

A JOINT VENTURE OF INDIAN INSTITUTES OF TECHNOLOGY & INDIAN INSTITUTE OF SCIENCE



NPTEL

2016-04-12

To
The Principal
MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING
IT PARK, SIRUSERI, OLD MAHABALIPURAM ROAD
CHENNAI - 603103
TAMIL NADU

Dear Sir/Madam,

Sub: Establishing SWAYAM NPTEL Local Chapter in your college

Greetings from the NPTEL office.

This is to acknowledge the receipt of your letter accepting to host SWAYAM NPTEL Local Chapter in your institution.

The Single Point of Contact (SPOC) nominated from your college is

Name of SPOC: DR. E. DHIRAVIDACHELVI
Designation: PROFESSOR
Department: ELECTRONICS AND COMMUNICATION ENGINEERING
Contact No(s): 9442046457
E-mail id: nptelspocmsajce@gmail.com

We wish to inform you that all future correspondence related to NPTEL contents and online courses will be made to the afore-mentioned SPOC. He/she will be routinely updated with all the latest NPTEL initiatives which then may be circulated among the students.

We are also happy to share that a dedicated SWAYAM NPTEL Local Chapter web page is being created and your institution will have a separate page on it (<http://nptel.ac.in/LocalChapter>).

Thanking you.

Sincerely

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT MADRAS

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S.NO	Name of the e-resources	Access URL
1	e-journals	http://164.100.247.26/
2	e-Books	http://ndl.iitkgp.ac.in/
3	e-Database	http://nptel.ac.in/
4	Open Access Resources	http://www.proquest.com/
5	Shodhganga	http://shodhganga.inflibnet.ac.in

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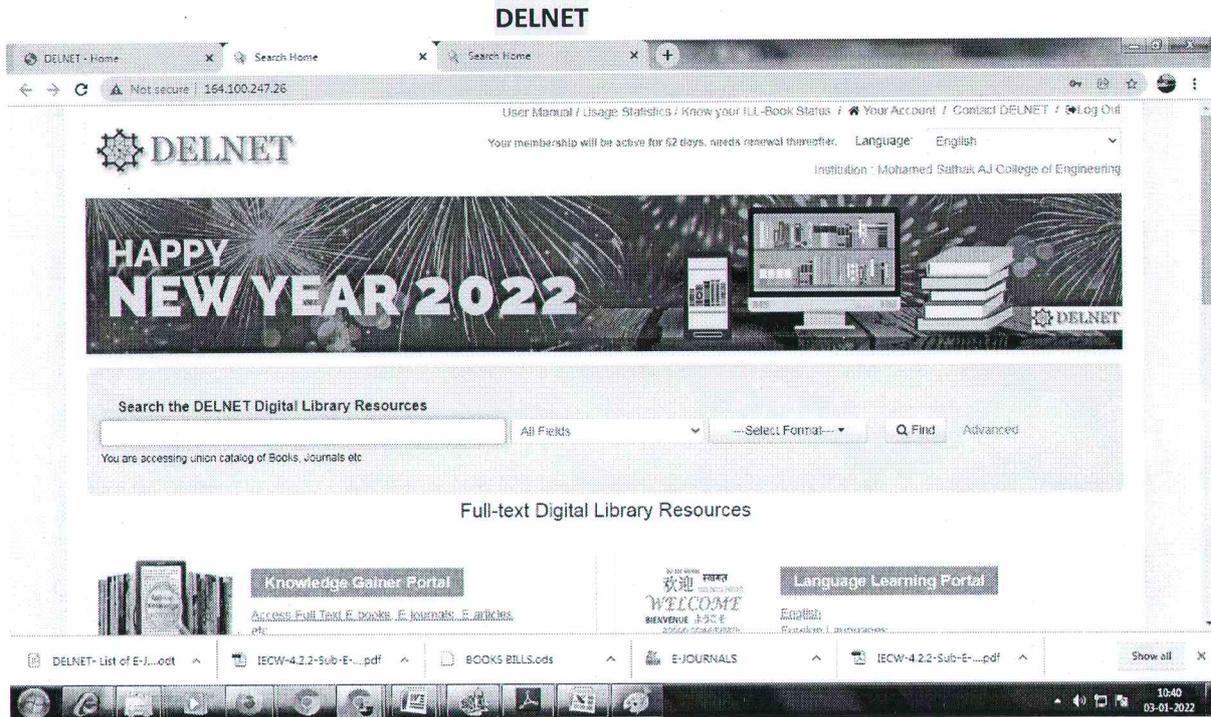
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Engineering & Technology (860)	
Automobile Engineering (15)	Chemical Engineering & Technology (46)
Computer Science (169)	Construction & Infrastructure (29)
Electrical and Nuclear Engineering (70)	Electronics & Communication Engineering (41)
General & Civil Engineering (113)	Hydraulic Engineering (14)
Industrial Engineering (46)	Manufacturing (25)
Materials (36)	Mechanical Engineering (40)
Military Sciences (23)	Mining and Metallurgy (20)
Technology (General) (63)	Transportation (35)
Engineering & Technology: only TOC	

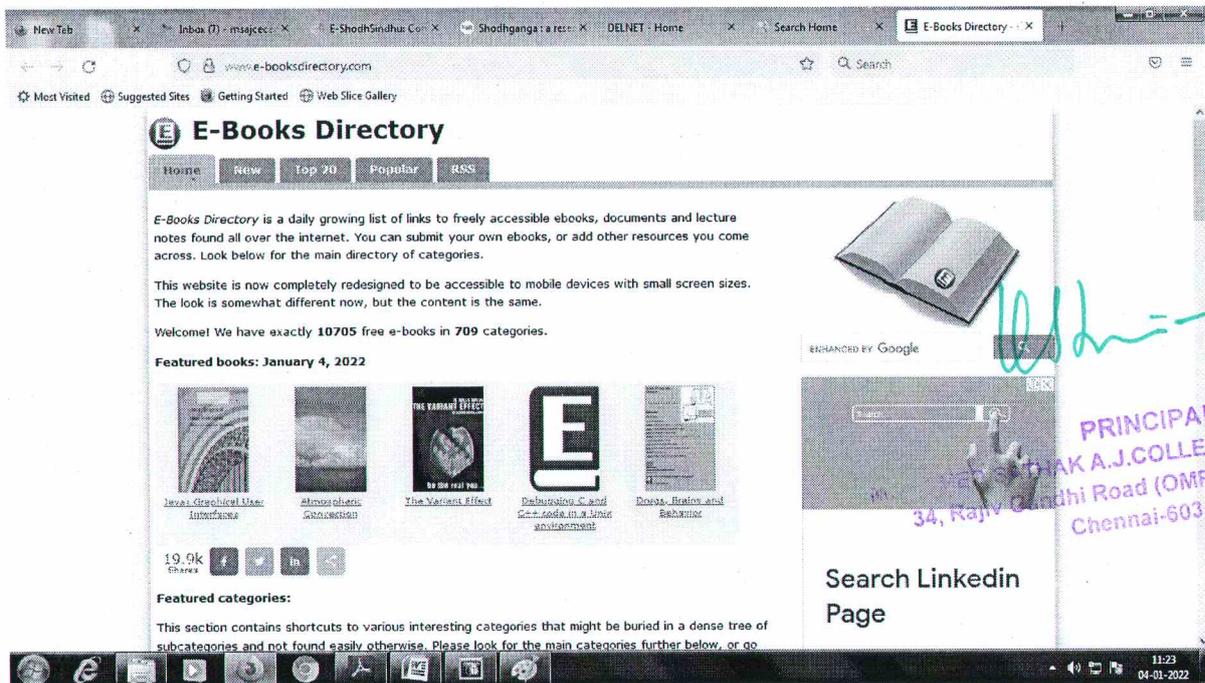


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1. Screenshot of Remote access to e-resources



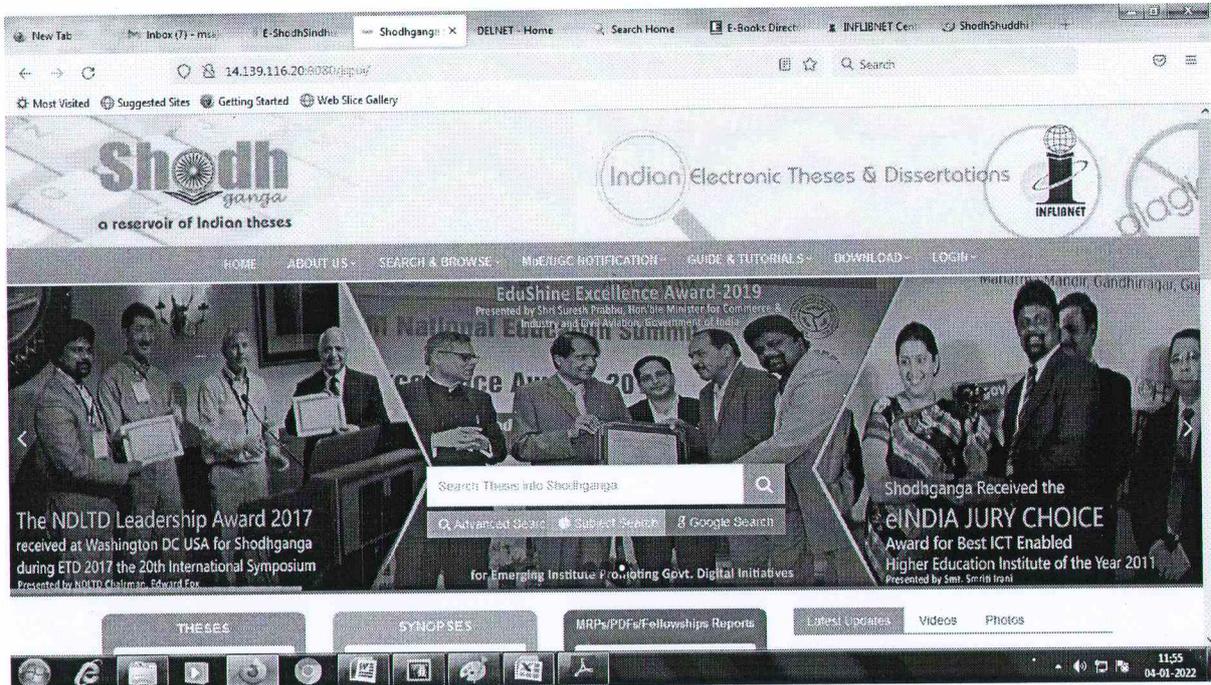
DELNET Digital Library



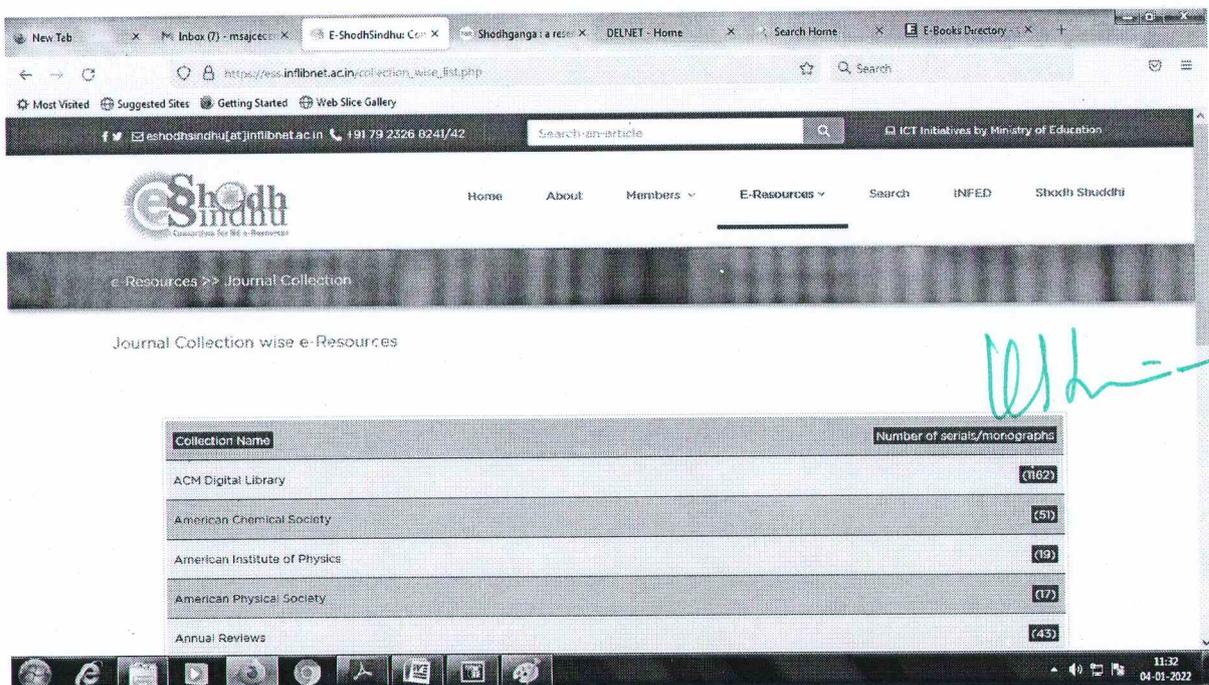


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SHODHGANGA- HOME PAGE



Screen Shot of E-Shodhsindhu



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Online e-Resource Requisition System

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Institute Profile

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Old Mahabalipuram Road, IT Park, Chennai, Tamil Nadu

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Address: Telephone:

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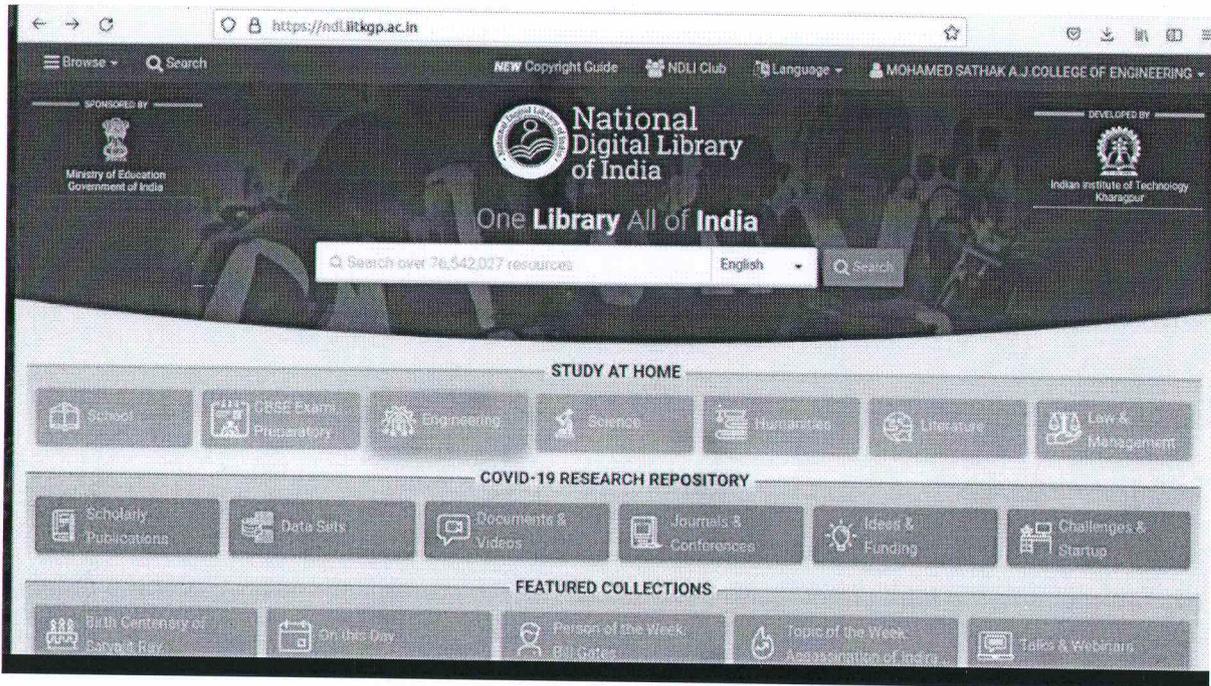
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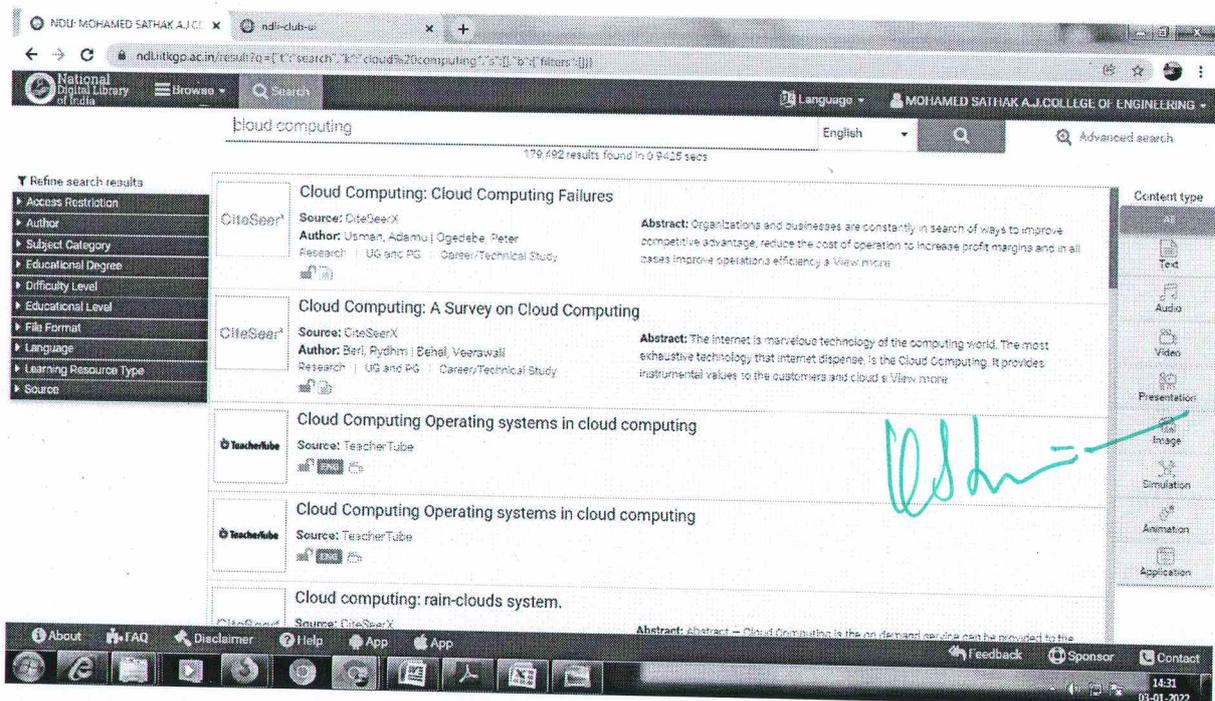
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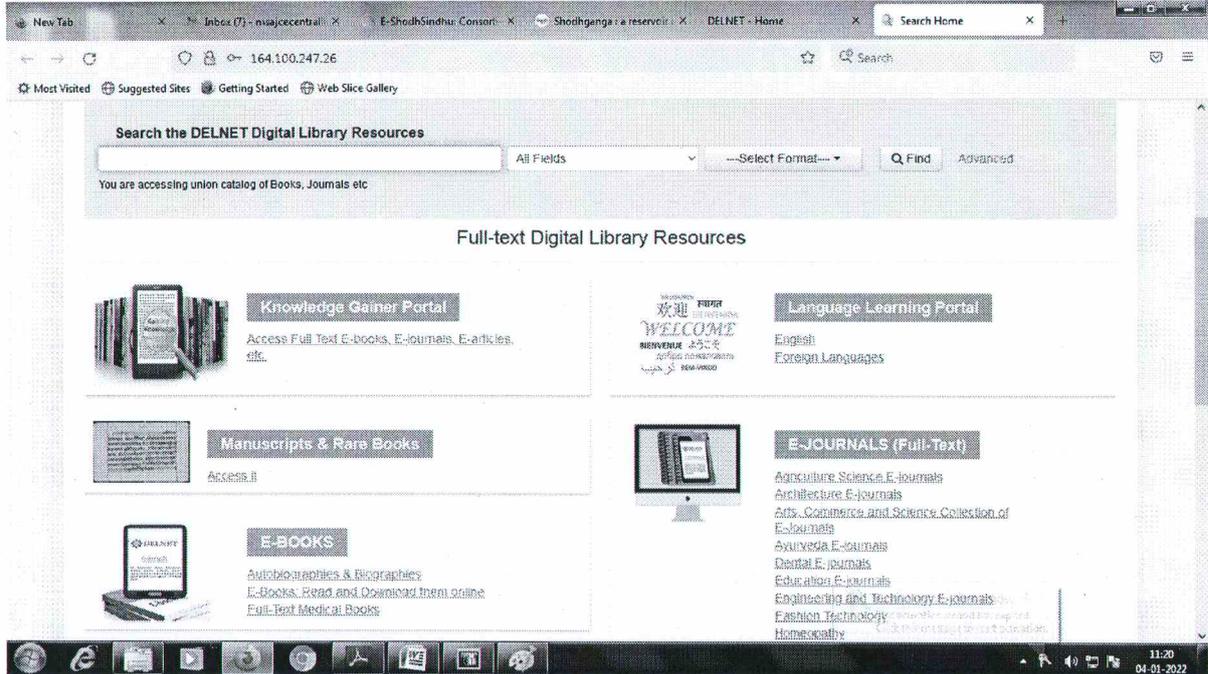


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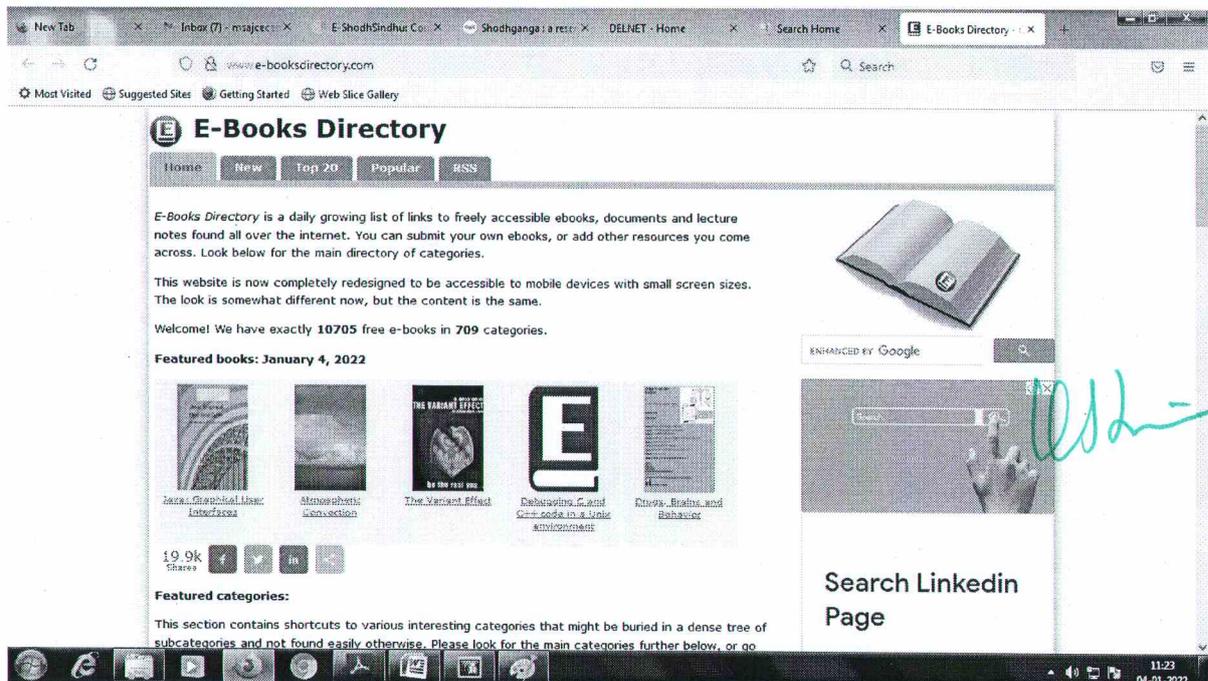


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E-Question Papers by Advanced Search

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E-Question Papers Search by Subject Wise

Question Bank

UC Courses (Full Time) - English Medium

- B.E. Agriculture and Irrigation Engineering
- B.E. Biomedical Engineering
- B.E. Civil Engineering
- B.E. Computer Science and Engineering
- B.E. Electrical and Electronics Engineering
- B.E. Electronics and Communication Engineering
- B.E. Geoinformatics Engineering
- B.E. Industrial Engineering
- B.E. Manufacturing Engineering

Search Result of AU Previous Year Question Papers in Digital Library Software

B.E Civil Engineering

Regulation 2015

Semester	Subject	Year
6	AI 7692 Dairy Engineering	Apr/May 2019

Regulation 2012

Semester	Subject	Year
2	CE 8201 Construction Materials	Apr' 2014
2	CE 8201 Construction Materials	Nov' 2013
2	CE 8201 Construction Materials	Apr' 2013
2	CY 8251 Chemistry for Civil and Agricultural Engineering	Apr' 2014
2	CY 8251 Chemistry for Civil and Agricultural Engineering	Nov/Dec 2013
2	PH 8203 Physics For Civil Engineering	Nov-13
2	PH8203 - Physics For Civil Engineering	Apr' 2013

Semester Subject Year

3	AG 8302 Engineering Geology	Apr/May 2019
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M.S.

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Result of Anna Unviersity E-Question Paper

Roll No.

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

CIVIL ENGINEERING
II-Semester
CE 8201- CONSTRUCTION MATERIALS
(Regulation 2012)

Time: 3 Hours Answer ALL Questions Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Write any two criteria for the selection of good building stones.
2. Based upon the IS codal provision how do you classify the bricks?
3. What is staking of lime?
4. What is setting time of cement?
5. Grade of concrete-define.
6. What is HPC?
7. Distinguish between heart wood and sap wood.
8. What are distempers?
9. What are Sealants?

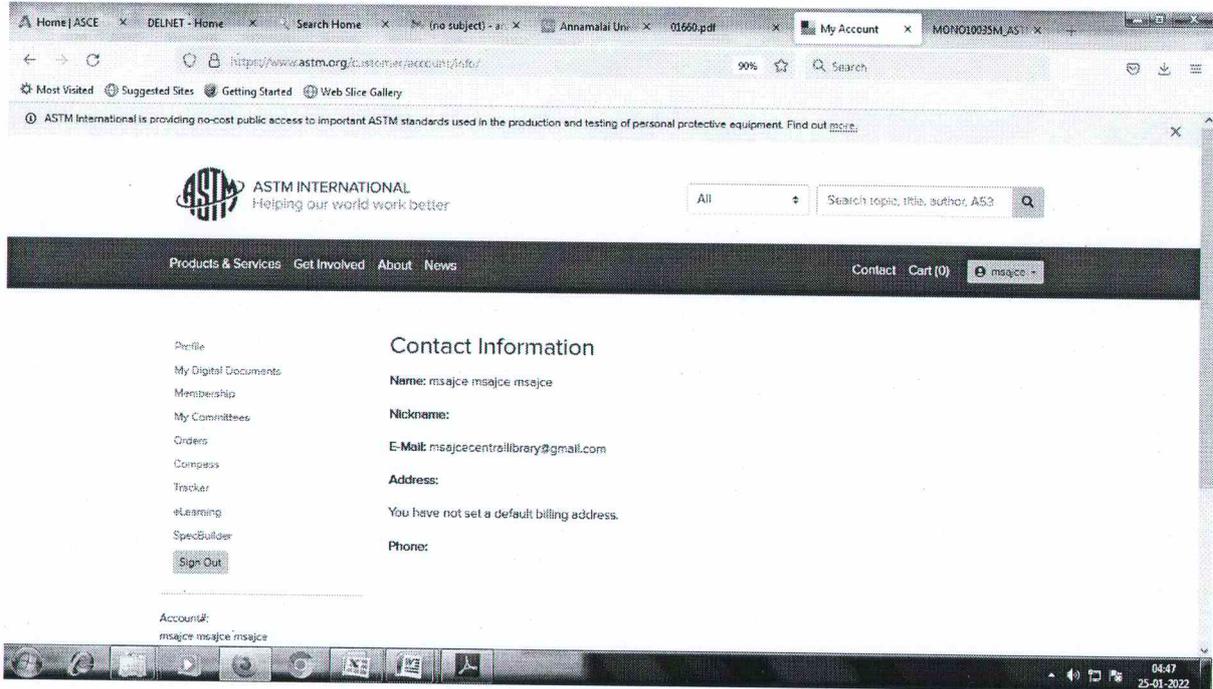
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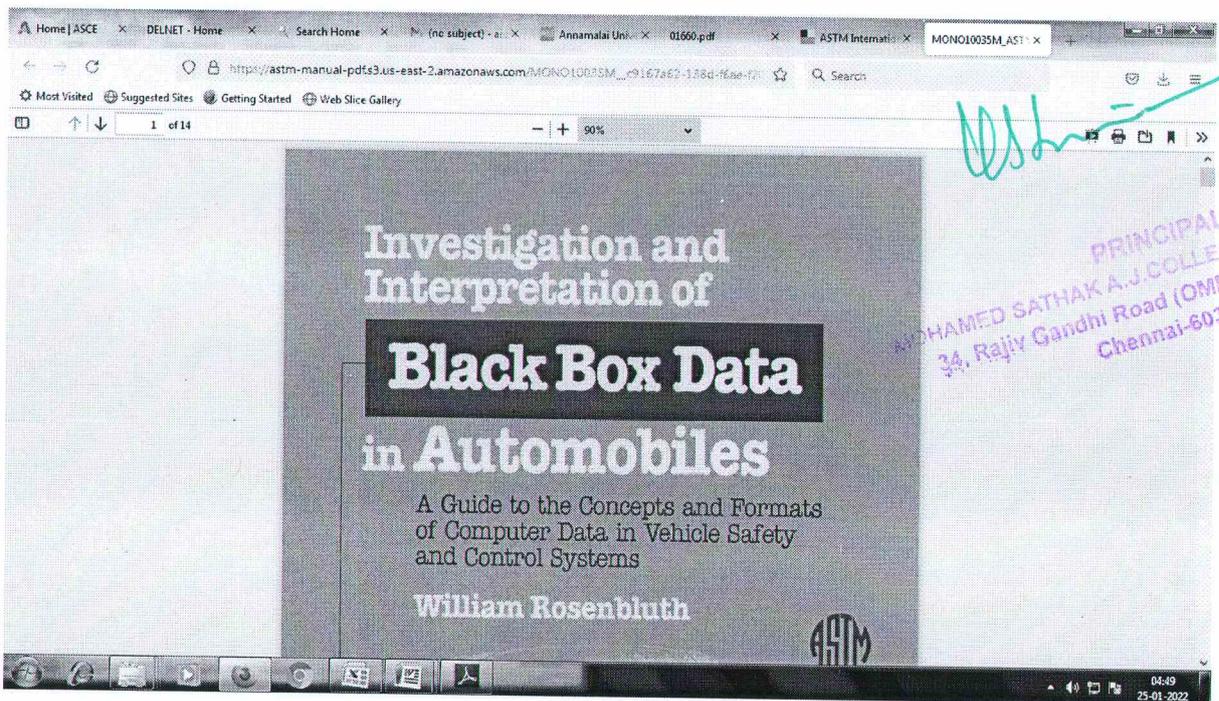


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d. List of Monograph and Search by Titles



Search Result of E-Monograph





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Bureau of Indian Standards
The National Standards Body of India

Published Standards

Know Your Standard | Group Wise Classification | Ministry/Department Wise Classification

Aspect: All | Publication Date: From: To: Submit

S.No	Technical Department	Total Standards
1	Civil Engineering Department (CED)	1845
2	Chemical Department (CHD)	1924
3	Electrotechnical Department (ETD)	1507
4	Food and Agriculture Department (FAD)	2169
5	Electronics and Information Technology Department (LITD)	1770
6	Mechanical Engineering Department (MED)	1387
7	Medical Equipment and Hospital Planning Department (MED)	1426
8	Management and Systems Department (MSD)	422

BIS - Indian Standard Coding list

CED 2 Standards List

Home / Standards List (CED 2)

Know Your Standard | Group Wise Classification | Ministry/Department Wise Classification

Aspect: Aspect | Publication Date: From: To: Submit

Retired Standards | New Standards | Total Standards: 162

S.No	IS Number	IS Title	Amendment	Reaffirmation Year	Document	Action
1	SP 23-1982	Handbook on Concrete Mixes	1	---	Buy	Comment
2	SP 34-1987	Handbook on Concrete Reinforcement and Detailing	1	---	Buy	Comment
3	IS 269-2015 Reaffirmed in 2020 (Third Revision)	Ordinary portland cement - Specification (Sixth Revision)	0	Dec, 2020	Download	Comment
4	IS 384-2015 Reaffirmed in 2021 (Third Revision)	Coarse and Fine Aggregate for Concrete - Specification (Third Revision)	2	Jan, 2021	Download	Comment
5	IS 455-2015 Reaffirmed in 2020	Portland slag cement - Specification	1	Dec, 2020	Download	Comment

Prof. Dr. M.L.
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BIS - Indian Standard Coding Book

IS 4262 : 1975 Specification for 4,4'-Diaminostilbene-2,2'-Disulphonic Acid

UDC 667.21.547.425.5 PCD 26

Reaffirmed 2021

1 Scope

1.1 This standard prescribes the requirements and the methods of sampling and test for 4,4'-diaminostilbene-2,2'-disulphonic acid which may be in the form of free acid or disodium salt.

2 References

IS 2 : 1969 Rules for rounding off numerical values

IS 170 : 1966 Specification for acetone

IS 265 : 1962 Specification for hydrochloric acid

IS 1070 : 1960 Specification for water, distilled quality

IS 2552 : 1970 Specification for steel drums (galvanized and ungalvanized)

IS 5299 : 1969 Methods of sampling and tests for dye intermediates

Standard Preview

Status: withdrawn

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Index for Online Classes

Sl. No.	Contents
1	Online Video Class
2	Assignment
3	Text Book
4	Internal Assesement
5	Case Study Material
6	Exam Preparation Class
7	MCQ Sample Question & MCQ Responses
8	Practical Exercise and Solution
9	Reference Books
10	Virtual Lab Samples



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The screenshot shows a Google Classroom interface for a class named 'CS8493 OS CSE AND IT'. The page is titled 'UNIT IV -Videos' and lists several video resources:

- File System implementation (Posted May 25, 2021)
- File System interface (Posted May 16, 2021)
- How do hard drives work (Posted May 6, 2021)
- HDD PART 3 (Posted May 6, 2021)
- HDD PART 2 (Posted May 6, 2021)
- HDD -Part 1 (Posted May 6, 2021)
- How Hard disk works (Edited May 6, 2021)
- Difference between SSD and Hard Drive (Posted May 6, 2021)

The browser's taskbar at the bottom shows the date as 10-05-2022 and the time as 23:26.

The screenshot shows a Google Classroom interface for the same class. It is divided into two sections:

Assignment

- Assignment 2 (Edited May 30, 2021)
- Assignment: 1.Consider a main memory wit... (DHP Apr 20, 2021)

Books

- Text Book for All 5 Units (Posted May 23, 2021)
- Unit I Reference Book (First Unit Topics are ... (Edited May 27, 2021)
- Unit V Reference Books (Posted May 24, 2021)
- Reference Book1 Ramesh Elmasri Operating... (Posted Apr 23, 2021)
- Reference Book 5 Operating Systems by Del... (Posted Apr 23, 2021)

A handwritten signature in blue ink is visible in the bottom right corner of the page. The browser's taskbar at the bottom shows the date as 10-05-2022 and the time as 23:26.

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The screenshot shows a Google Classroom interface for the course 'CS8493 OS' (CSE AND IT). The page is viewed from the 'Classwork' tab. At the top, there is a navigation bar with 'Stream', 'Classwork', 'People', and 'Grades'. Below this, a card titled 'EPC1- CS8493- Operating System' (dated May 26, 2021) contains an assignment titled 'Solution Manual-TextBook -OS'. Underneath this assignment, there is a list of resources under the heading 'Unit V':

- Book Back Exercise Solutions for Operating...
- Practice Exercise-Solution
- Operating System Structure
- Case Study on Linux PDF material
- Case Study- Android Operating System pdf...
- Linux and Mobile OS- pdf and videos

The bottom of the screenshot shows a Windows taskbar with the date 10-05-2022 and time 23:25.

This screenshot shows the 'IAT' (Internal Assessment Test) section of the 'CS8493 OS' classroom. The 'Classwork' tab is selected. A card titled 'IAT' lists three assignments:

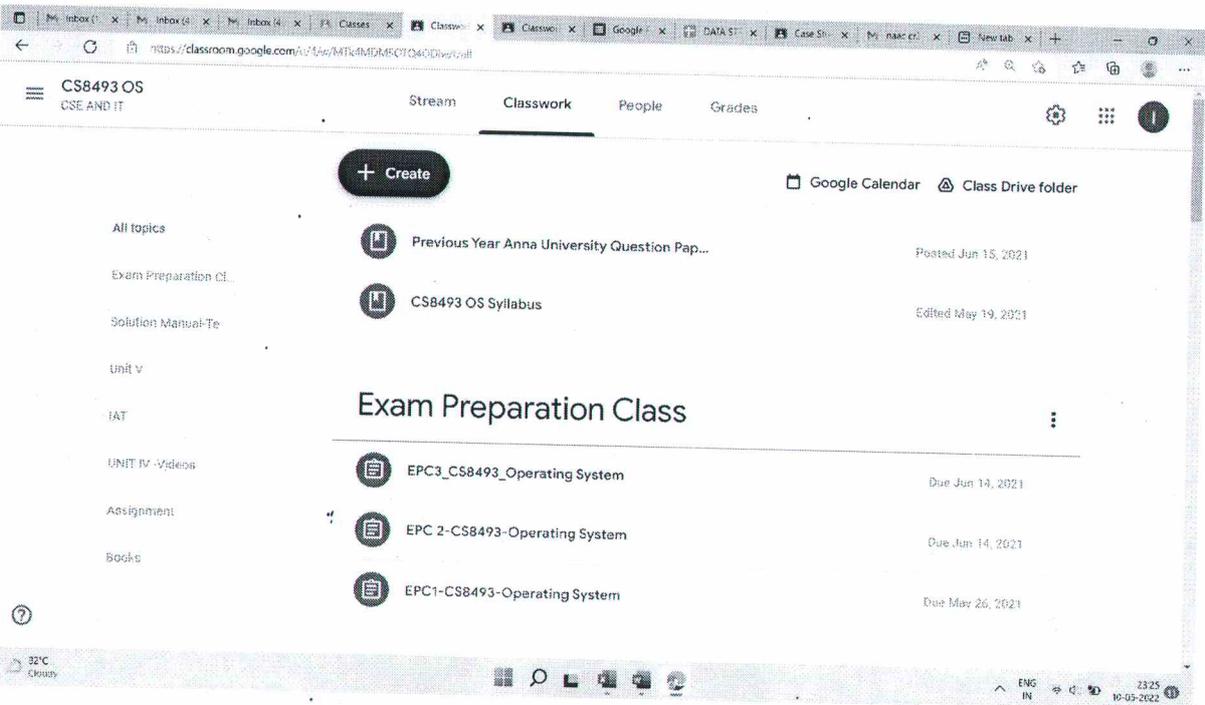
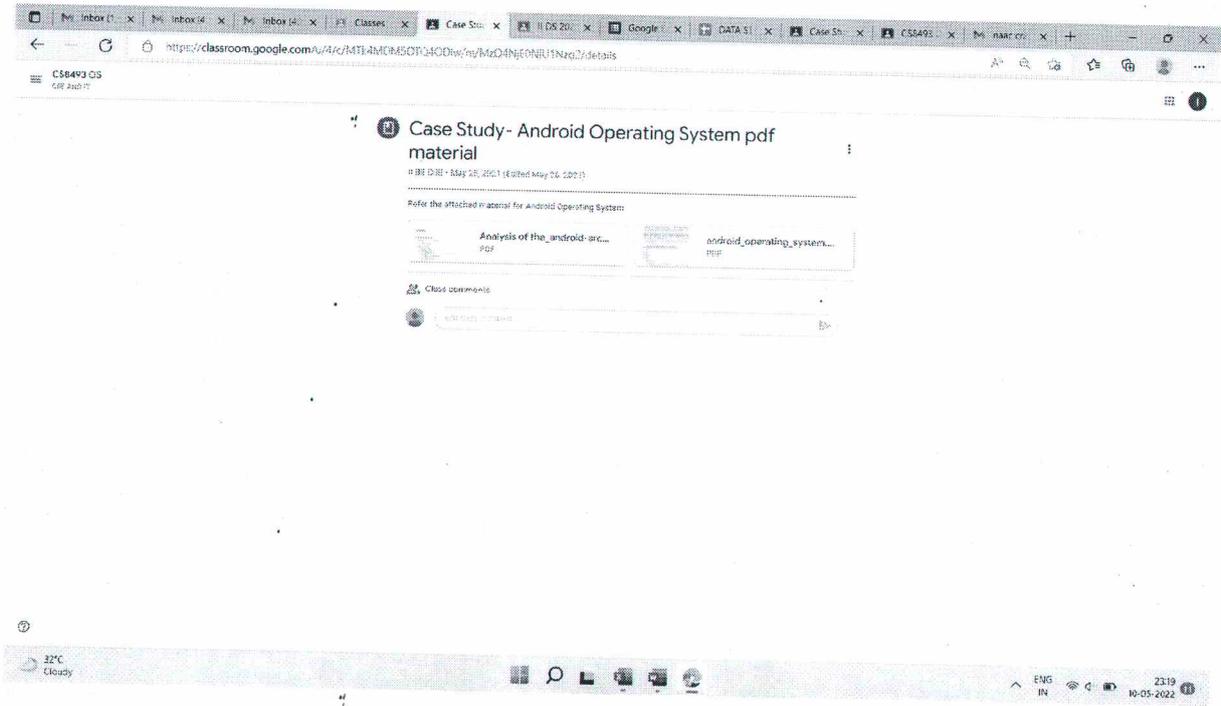
- Internal Assessment Test -2 CS8493 Operati... (Due Apr 30, 2021)
- Internal Assessment Test -1 CS8493 Operati... (Edited May 19, 2021)
- Internal Assessment Test -3 CS8493 Operati... (Due May 19, 2021, 11:59 PM)

The bottom of the screenshot shows a Windows taskbar with the date 10-05-2022 and time 23:25.

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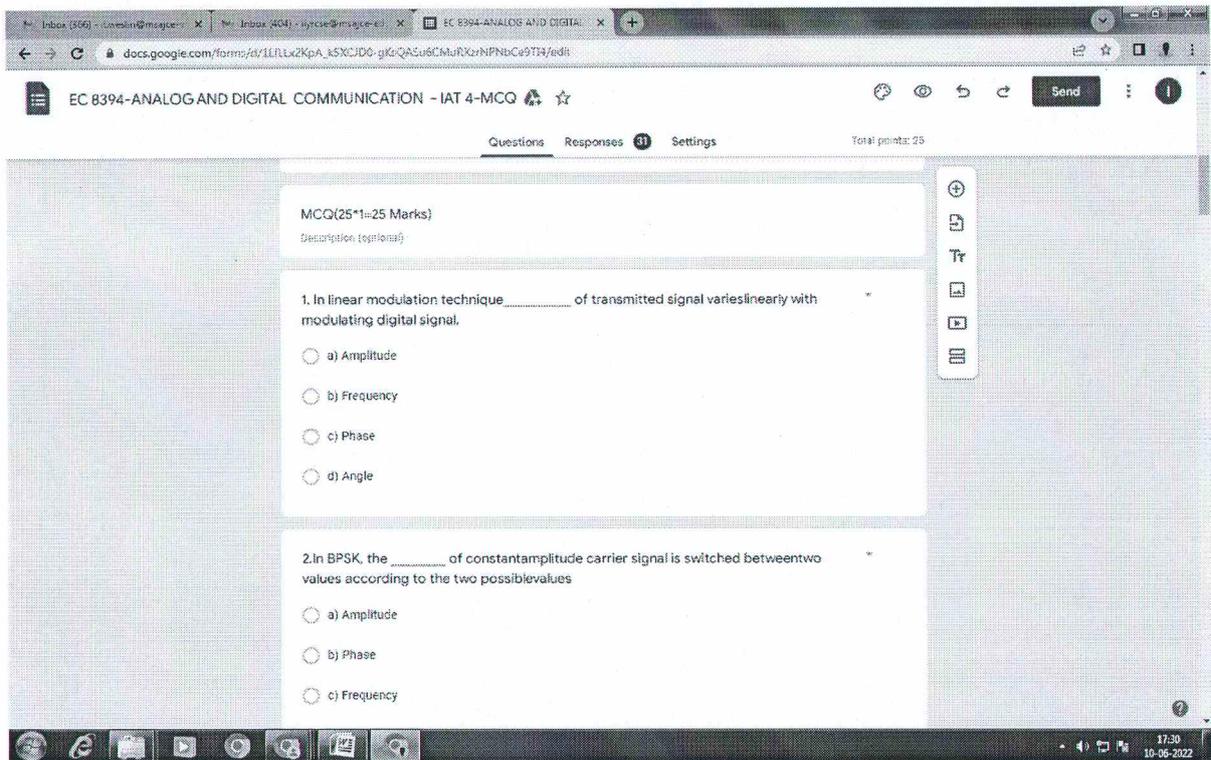
The screenshot shows a Google Classroom page for an 'Internal Assessment Test -2 CS8493 Operating System'. On the left, a list of 48 students is visible, including names like Animesh F, SHA, AS, M, and others. The main area displays 12 questions, each with a student's name and a 'Turned in' status. The interface includes a top navigation bar with 'Internal Home' and 'Student work' tabs, and a bottom status bar showing the time as 23:09 on 10-05-2022.

The screenshot shows a Google Classroom page titled 'Text Book for All 5 Units'. It features a document titled 'Abraham-Silberschatz-Operating-System-7th-Edition-2011.pdf' and a section for 'Class comments'. The page is viewed on a desktop browser with the URL <https://classroom.google.com/.../details>.

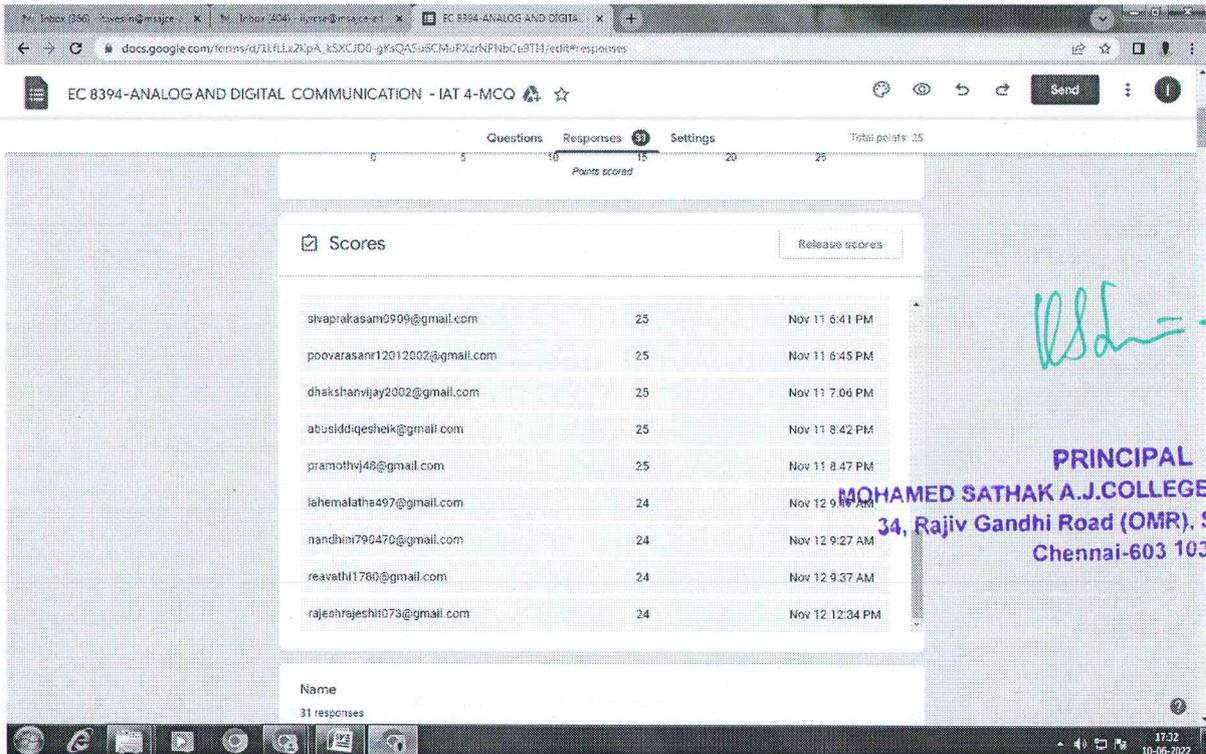
The screenshot shows a browser address bar with a Google Drive link: https://drive.google.com/file/d/1TXt4n2maVM1DNCLFpWR93258k7N/view?usp=drive_web&authuser=4. The bottom status bar shows the time as 23:15 on 10-05-2022.

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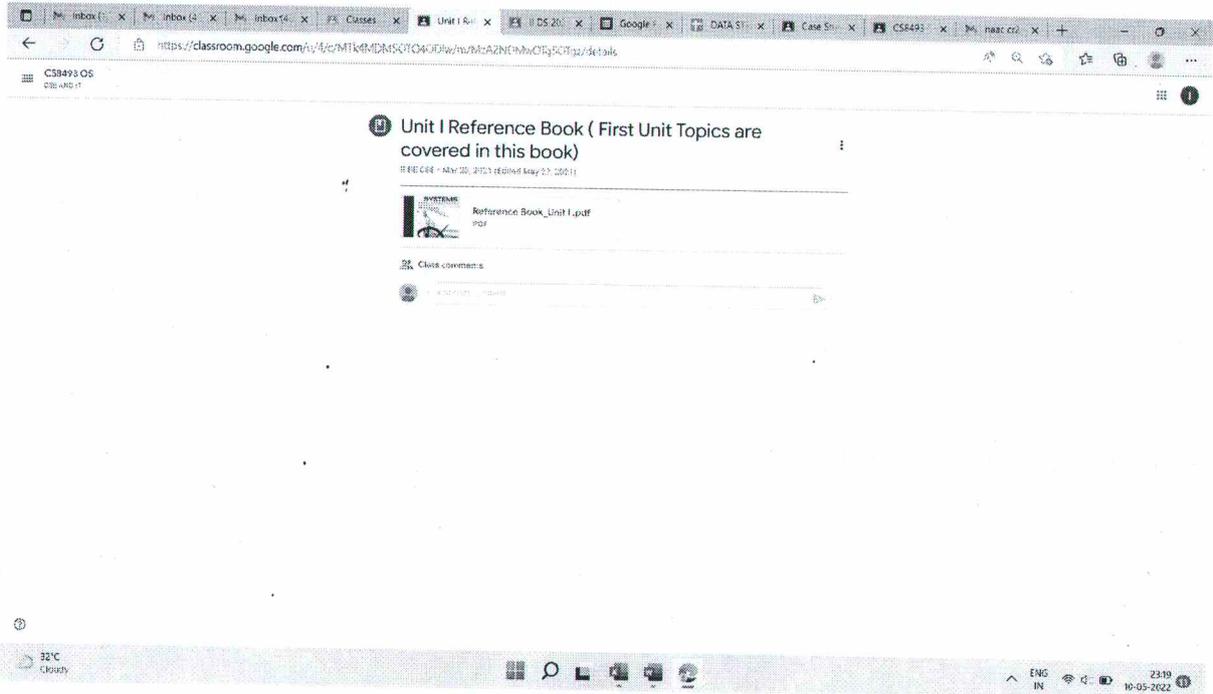
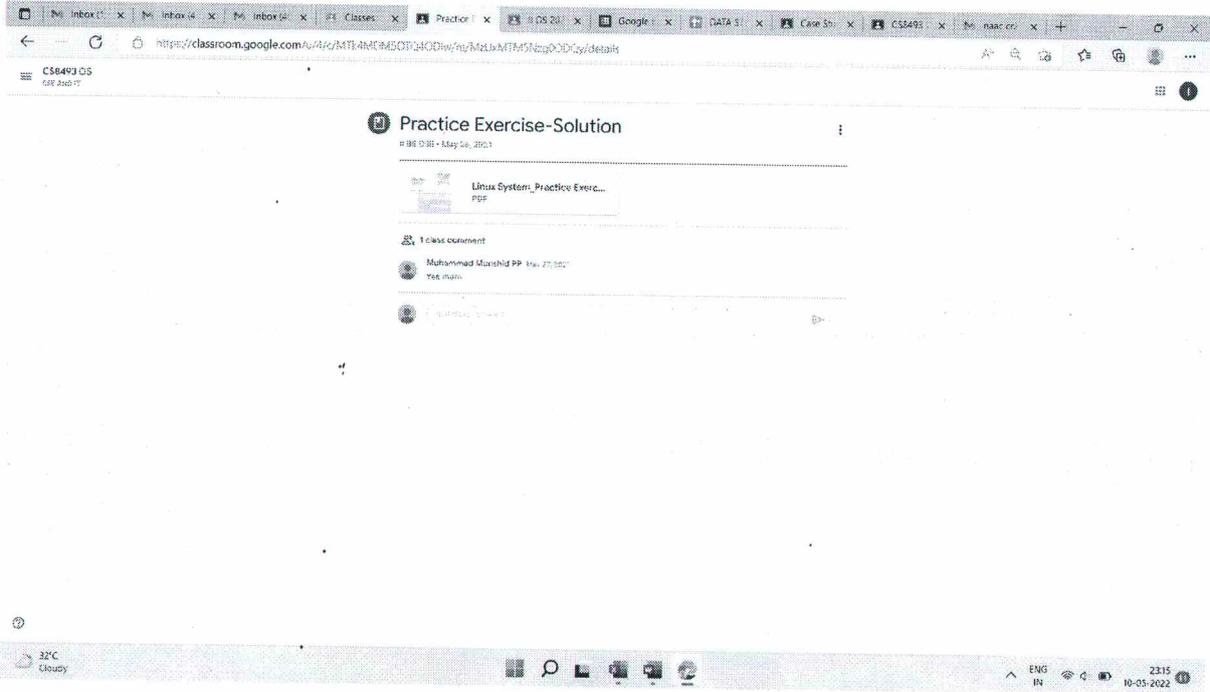


Sample MCQ



Sample of MCQ Responses

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The screenshot shows a Google Classroom interface. At the top, the title is "Book Back Exercise Solutions for Operating Systems-Abraham Silberschatz". Below the title, there is a message: "Textbook is already posted in the book section. Keep this as reference." The main content area displays a grid of 20 PDF files, each representing a chapter solution: ch01.pdf, ch02.pdf, ch03.pdf, ch04.pdf, ch05.pdf, ch06.pdf, ch07.pdf, ch08.pdf, ch09.pdf, ch10.pdf, ch11.pdf, ch12.pdf, ch13.pdf, ch14.pdf, ch15.pdf, ch16.pdf, ch17.pdf, and ch19.pdf. The browser's taskbar at the bottom shows the date as 10-05-2022 and the time as 23:05.

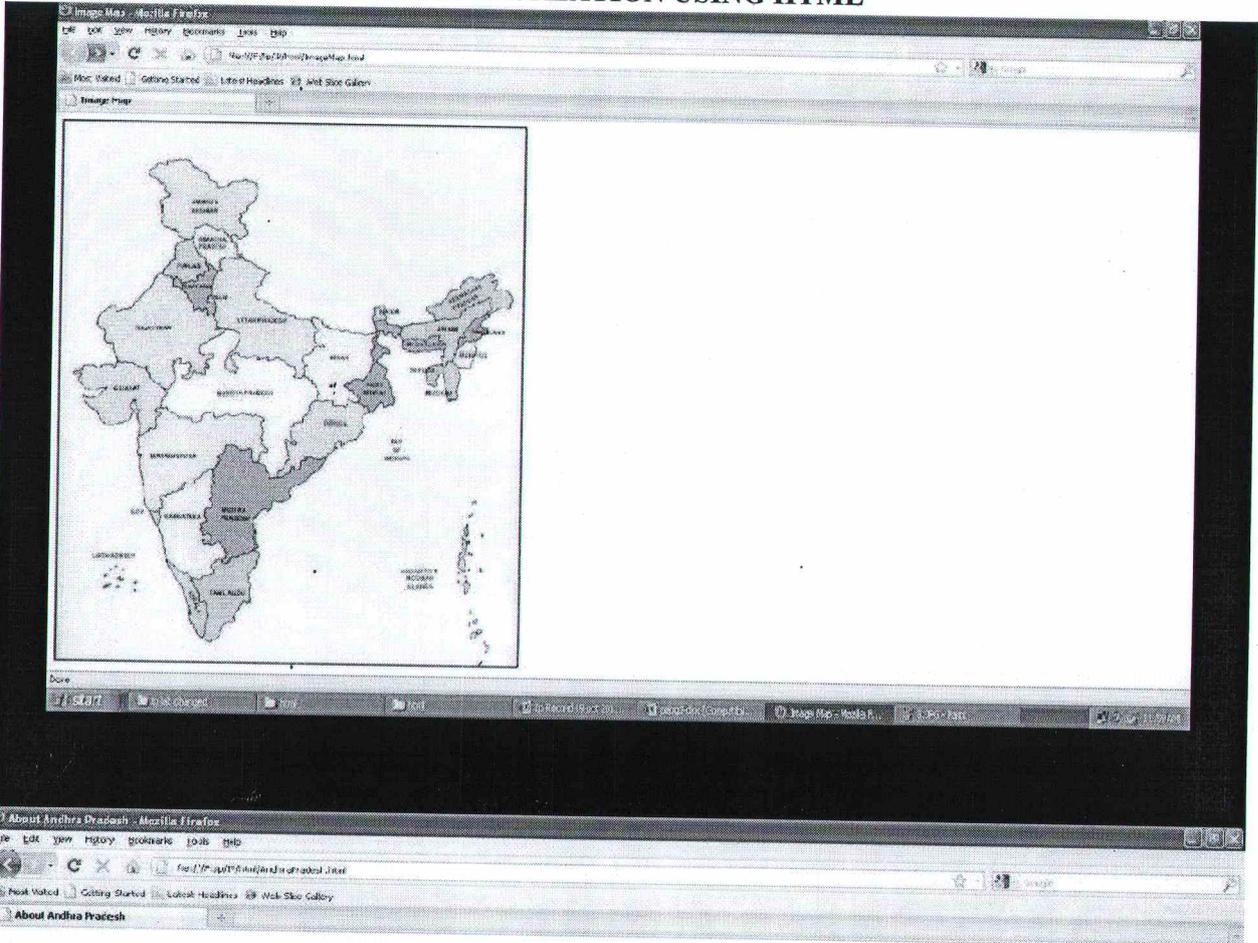
The screenshot shows a Google Classroom interface. The title is "Unit V Reference Books". Below the title, there are three reference book entries: "iphone ios 6 Development E...", "Reference Book 7, phone la...", and "Reference Book, Understan...". There is also a section for "Class comments" which is currently empty. The browser's taskbar at the bottom shows the date as 10-05-2022 and the time as 23:07.

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VIRTUAL LAB SAMPLES

WEB PAGE CREATION USING HTML



Andhra Pradesh

- Area : 2,75,068 Sq. Kms
- Capital : Hyderabad
- Language : Telugu
- Population : 7,57,27,541

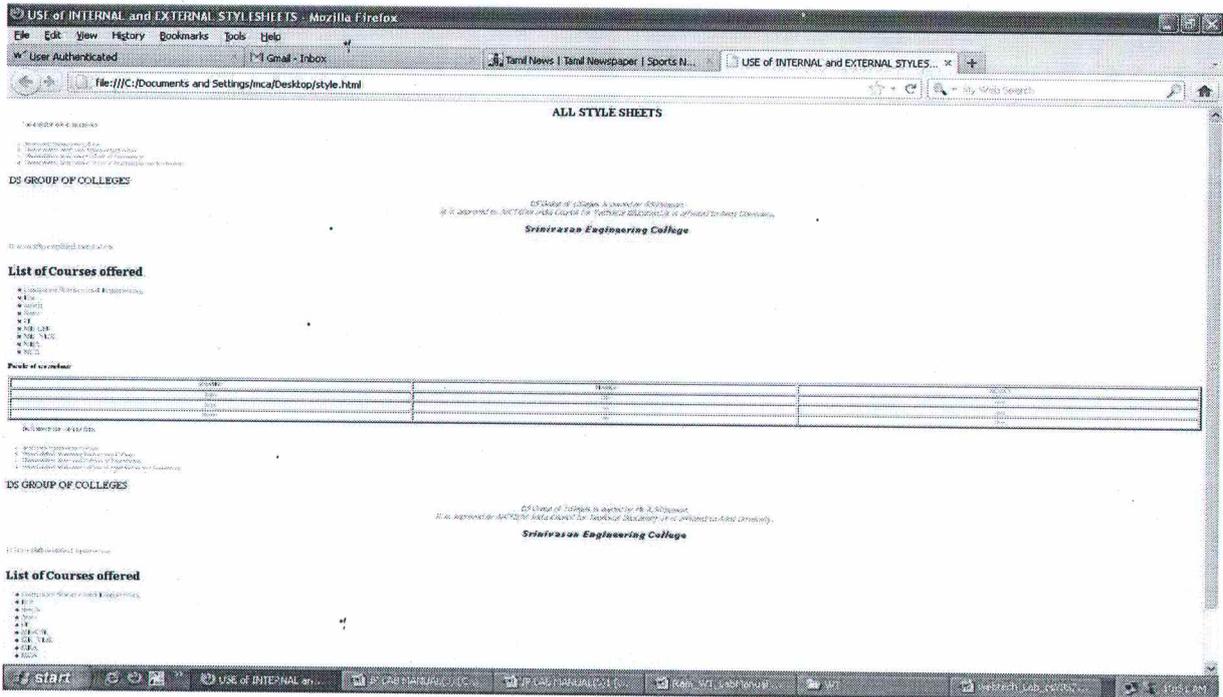
[India Map](#)

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CASCADING STYLE SHEETS.

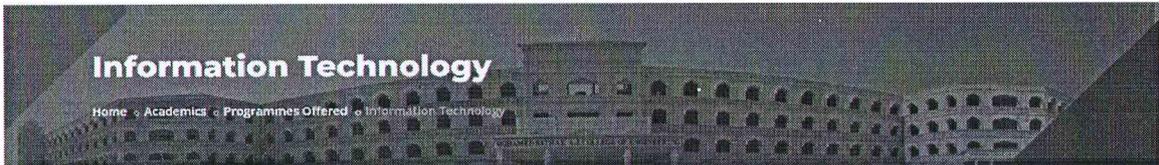


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- Department Facilities
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- News and Events
- Student Activities
- Members of Alumni Association

ACADEMICS

ANNA UNIVERSITY REGULATION, SYLLABUS

[BE - 2013 Syllabus](#)

[BE - 2017 Syllabus](#)

[BE - 2017 Regulation](#)

COURSE MATERIALS

Sl.No.	Subject Code	Subject Name	Lesson Plan	Question Bank	Lecture Notes	ICT Tools
1	GE8151	Problem Solving and Python Programming	VIEW	VIEW	VIEW	VIEW
2	IT8201	Information Technology Essentials	VIEW	VIEW	VIEW	VIEW
3	CS8251	Programming in C	VIEW	VIEW	VIEW	VIEW
4	CS8391	Data Structures	VIEW	VIEW	VIEW	VIEW
5	CS8392	Object Oriented Programming	VIEW	VIEW	VIEW	VIEW
6	CS8491	Computer Architecture	VIEW	VIEW	VIEW	VIEW
7	CS8492	Database Management Systems	VIEW	VIEW	VIEW	VIEW
8	CS8491	Design and Analysis of Algorithms	VIEW	VIEW	VIEW	VIEW
9	CS8492	Operating Systems	VIEW	VIEW	VIEW	VIEW
10	CS8591	Computer Networks	VIEW	VIEW	VIEW	VIEW
11	IT8501	Web Technology	VIEW	VIEW	VIEW	VIEW
12	CS8494	Software Engineering	VIEW	VIEW	VIEW	VIEW
13	IT8601	Computational Intelligence	VIEW	VIEW	VIEW	VIEW
14	CS8592	Object Oriented Analysis and Design	VIEW	VIEW	VIEW	VIEW

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LESSON PLAN							
Department of Electronics and Communication Engineering							
Name of the Subject	MEDICAL ELECTRONICS	Regulation	2017				
Subject Code	EC8073	Year / Sem	III/IV				
Acad Year	AY 2019-2020	Batch	2017-2021				
Course Objective							
To gain knowledge about the physiological parameters (characteristics) and recording methods of bioelectric signals							
To analyse the bio-chemicals and various physiological information							
To study about various assist devices used in hospitals							
To study the equipment used for physical medicine and the various recently developed diagnostic and therapeutic techniques.							
To gain knowledge about the concepts of medical instrumentation in recent technology (laser, telemedicine, endoscopy unit).							
Course Outcome							
At the end of the course, the students should be able to:							
CO1: Discuss the physiological parameters (characteristics) and recording methods of bioelectric signals							
CO2: Measure various bio chemical information							
CO3: Measure various physiological information							

CO3: Measure various physiological information							
CO4: Illustrate the working of human assist devices used in hospitals and to know about telemetry principles							
CO5: Describe the recent trends in diagnosis & Therapy (laser, telemedicine, endoscopy unit).							
Lesson Plan							
Sl. No.	Topic(s)	T / R*		Mode of Teaching (BB / PPT / NPTEL / MOOC / etc)	Blooms Level (L1-L6)	CO	PO
		Book	Periods Required				
UNIT I ELECTRO-PHYSIOLOGY AND BIO-POTENTIAL RECORDING							
1	Introduction	T1	1	BB,PPT	L1	CO1	PO1
2	Sources of Biomedical Signals, Basic Medical Instrumentation system	T1,R1	1	BB	L2	CO1	PO1-PO2
3	Origin of Bio-potentials	T1	1	BB	L2	CO1	PO1
4	Bio-potential electrodes (Ag-AgCl Electrodes, Surface Electrode, Nernst equation)	T1,R1	1	BB,PPT	L2	CO1	PO1,PO2
5	Biological amplifiers	T1	1	BB,PPT	L2	CO1	PO1,PO2
6	ECG – (Electrodes, Amplifiers, Lead set up, System, Waveforms and Signal Characteristics)	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO6,PO7,PO12
7	EEG – (Electrodes, Amplifiers, Lead set up, System, Waveforms and Signal Characteristics)	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
8	EMG – (Electrodes, Amplifiers, Lead set up, System, Waveforms and Signal Characteristics)	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
9	PCG – System and Signal Characteristics	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any							

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7	EEG - (Electrodes, Amplifiers, Lead set up, System, Waveforms and Signal Characteristics)	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
8	EMG - (Electrodes, Amplifiers, Lead set up, System, Waveforms and Signal Characteristics)	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
9	PCG - System and Signal Characteristics	T1,R1	1	BB,PPT	L3	CO1	PO1,PO2,PO12
Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any							
Assignment : comparison of various bio potential recording system							
Evaluation method : Assignment papers collected							
UNIT II BIO-CHEMICAL AND NON ELECTRICAL PARAMETER MEASUREMENT							
10	Introduction to biochemical process- PH, PO2	R1	1	BB	L2	CO2	PO1,PO2

11	PCO2	R1	1	BB	L2	CO2	PO1,PO2
12	Colorimeter	R1	1	BB	L2	CO2	PO1,PO2
13	Auto analyser	R1	1	BB	L3	CO2	PO1,PO2,PO12
14	Blood flow meter	R1	1	BB	L3		PO1,PO2,PO6,PO

11	PCO2	R1	1	BB	L2	CO2	PO1,PO2
12	Colorimeter	R1	1	BB	L2	CO2	PO1,PO2
13	Auto analyser	R1	1	BB	L3	CO2	PO1,PO2,PO12
14	Blood flow meter	R1	1	BB	L3	CO2	PO1,PO2,PO6,PO7,PO12
15	Cardiac output and Respiratory measurement	R1	1	BB,PPT	L3	CO3	PO1,PO2
16	Blood pressure	R1	1	BB,PPT	L3	CO3	PO1,PO2,PO6,PO7,PO12
17	Temperature and pulse	R1	1	BB	L3	CO3	PO1,PO2
18	Blood Cell Counters	R1	1	BB	L2	CO2	PO1,PO2,PO12

Suggested Activity: Assignment / Case Studies / Tutorials/ Quiz / Mini Projects / Model Developed/others Planned if any
 Mini project: Temperature Monitoring
 Evaluation method : Implement and Evaluate

UNIT III ASSIST DEVICES

19	Introduction to Assist devices	T1	1	BB,NPTEL	L2	CO4	PO1,PO2
20	Cardiac Pacemaker: Primary node and Secondary node	T1,R1	1	PPT	L3	CO4	PO1,PO2,P12
21	Cardiac Pacemaker: Generation of action potentials	T1	1	PPT	L2	CO4	PO1,PO2,PO12
22	DC Defibrillator: Definition Block diagram	T1	1	PPT	L3	CO4	PO1,PO2,PO12
23	Internal Defibrillator and External Defibrillator	T1,R1	1	PPT	L2	CO4	PO1,P O2
24	A.C. defibrillator and D.C. defibrillator	T1	1	PPT	L2	CO4	PO1,P O2
25	Dialyzer -peritoneal,hemodialysis	T1,R1	1	BB	L4	CO4	PO1,PO2,PO6,PO7,PO12
26	MRI	T1	1	BB	L3	CO4	PO1,PO2,PO6,PO7,PO12
27	Ultrasonic imaging system	T1	1	BB	L3	CO4	PO1,PO2,PO6,PO7,PO12

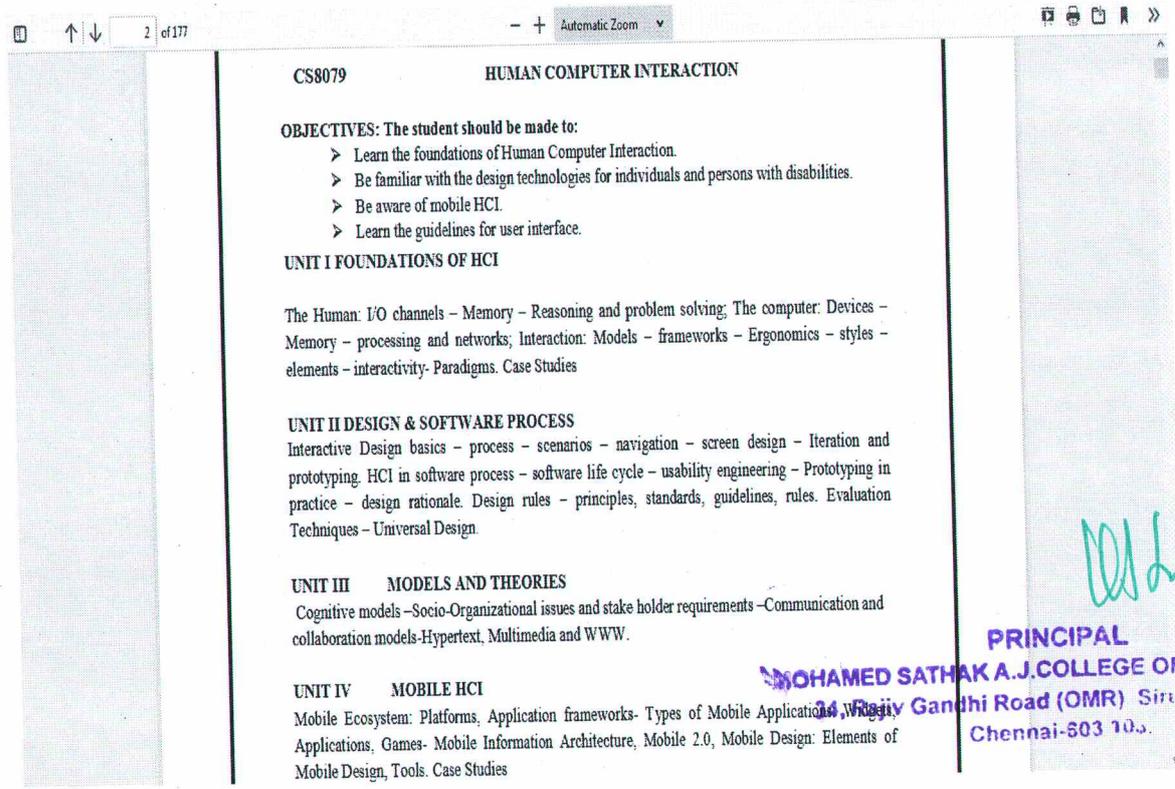
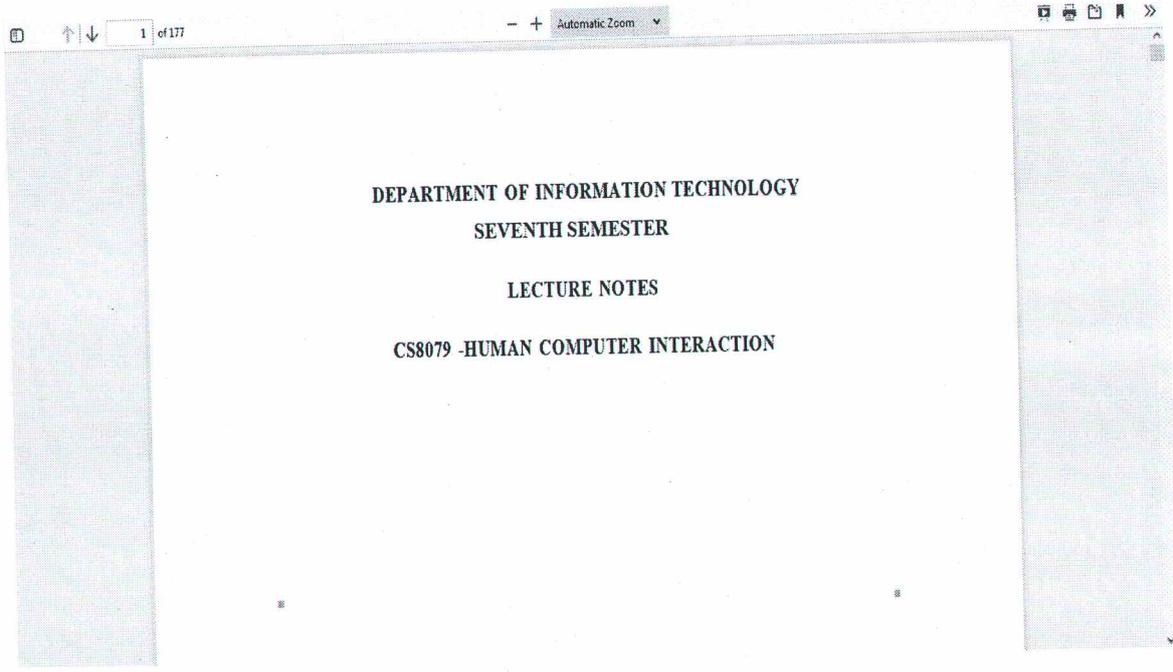
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27	Ultrasonic Imaging system	T1	1	BB	L3	CO4	PO1,PO2,PO6,PO7,PO12
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any : Industrial Visit							
Evaluation method : Visit the nearby hospital for learning of medical equipments and submit a report							
UNIT IV PHYSICAL MEDICINE AND BIOTELEMETRY							
28	Diathermies- shortwave	T1,R1	1	BB	L3	CO4	PO1,PO2,PO12
29	Ultrasonic	T1,R1	1	BB	L3	CO4	PO1,PO2
39	Microwave applications	T1	1	PPT	L4	CO4	PO1,PO2
31	Surgical diathermy	T1	1	PPT	L3	CO4	PO1,PO2
32	Telemetry principles	T1	1	PPT	L2	CO4	PO1,PO12
33	Frequency selection	T1,R1	1	BB	L2	CO4	PO1
34	Biotelemetry	T1	1	PPT	L2	CO4	PO1,PO2,PO12
35	single channel bio telemetry	T1	1	PPT	L2	CO4	PO1,PO2,PO12
36	multichannel bio telemetry ,ECG telemetry	T1	1	PPT	L2	CO4	PO1,PO2,PO12
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any :Case study Compare the side effects of Microwave ,CT Scan,MRI,							
Evaluation method : Online MCQ Quiz							
UNIT V RECENT TRENDS IN MEDICAL INSTRUMENTATION							
37	Introduction to medical instrumentation	R1	1	BB	L2	CO5	PO1-PO2,PO6,PO12
38	Telemedicine,Introduction	T1	1	BB	L2	CO5	PO1-PO2,PO6,PO12

CO5	3	3	0	0	0	0	0	0	0	0	0	0	2	0	0
Avg	3	3	0	0.6	0	0.6	0.8	0	0	0	0	0	1.6	0.8	0
Justification for CO-PO mapping															
CO1	Various fundamental key elements related to bioscience are described Highly in PO1. High correlation of Different concepts of recording bio signals are being analyzed to produce engineering solutions in medical field PO2.Less impact environmental engineering solutions and society PO6,PO7. Here is a reasonable need for continuous learning required PO12														
CO2	Various fundamental key elements like electrode and non electrical parameter are described Highly in PO1. High correlation of Different measurement concepts are being analyzed to produce engineering solutions in medical field PO2. Less impact environmental engineering solutions and society PO6,PO7. Here is a reasonable need for continuous learning required PO12														
CO3	Highly described Various fundamental key elements used for assist devices indicated in PO1. Modern equipments concepts are being analyzed to produce engineering solutions in medical field PO2. Less impact environmental engineering solutions and society PO6,PO7. Here is a reasonable need for continuous learning required PO12														
CO4	fundamental key of physical medicine and telemetry signals used for medical field are described in PO1 Highly. Understands the work of different telemetry concepts in combination .PO2. Side effects of different scanning method asked .PO4.Less impact environmental engineering solutions and society PO6,PO7. Here is a reasonable need for continuous learning required PO12														
CO5	Highly described Basic concepts used in the latest medical technology advancement PO1. Different systems are analyzed PO2. Less impact environmental engineering solutions and society PO6,PO7. Here is a reasonable need for continuous learning required PO12														
	3	High level			2	Moderate level			1	Low level					
Name & Sign of Faculty Incharge : MRS.I.S.SUGANTHI															
Name & Sign of Subject Expert :															
Head of the Department : Mr Kamarajan															
Format No :231															

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UNIT I FOUNDATIONS OF HCI

The Human: I/O channels – Memory – Reasoning and problem solving; The computer: Devices – Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity- Paradigms. Case Studies

Introduction

Human-computer interaction (commonly referred to as HCI) researches the design and use of computer technology, focused on the interfaces between people (users) and computers. Researchers in the field of HCI both observe the ways in which humans interact with computers and design technologies that let humans interact with computers in novel ways.

User

By "user", we may mean an individual user, a group of users working together. An appreciation of the way people's sensory systems (sight, hearing, touch) relay information is vital. Also, different users form different conceptions or mental models about their interactions and have different ways of learning and keeping knowledge and. In addition, cultural and national differences play a part.

Computer

When we talk about the computer, we're referring to any technology ranging from desktop computers, to large scale computer systems. For example, if we were discussing the design of a Website, then the Website itself would be referred to as "the computer". Devices such as mobile phones or VCRs can also be considered to be —computers!.

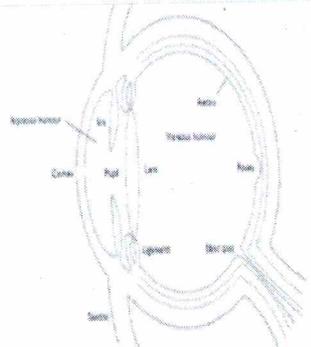


Figure: Human Eye

The retina is mainly covered with photoreceptors there is one blind spot where the optic nerve enters the eye. The blind spot has no rods or cones, our visual system compensates for this so that in normal circumstances we are unaware of it.

The retina also has specialized nerve cells called ganglion cells. There are two types:

X-cells, which are concentrated in the fovea and are responsible for the early detection of pattern; and Y-cells which are more widely distributed in the retina and are responsible for the early detection of movement. The distribution of these cells means that, while we may not be able to detect changes in pattern in peripheral vision, we can perceive movement.

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