

2.2.1: The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners [30]

2.2.1: Slow Learners

Institute caters to advanced and slow learners separately to enhance their learning abilities and acquire and excel in different skill sets. The institute has a well-designed mechanism to facilitate them through various activities. The activities for slow learners: Remedial / Make-up/ Extra coaching classes conducted, Personal attention in teaching-learning and necessary support through Teacher Guardian scheme, Re-test/s, conducted for improvement and confidence building, Extra practical sessions conducted as per need, Important study materials provided, practice of solving university question papers, assignments ,Question banks are provided, Guidance for Seminar/Project presentation, Arranged additional Mock oral/practical examination, Unit wise tutorials conducted.

Index:
Department wise details

SR. NO.	DEPARTMENT	Page Nos.
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Dr. M. S. GAIKWAD
 PRINCIPAL
 Sinhgad Institute Of Technology, Lonavala

- Remedial / Make-up classes/ Extra lectures

Remedial class Notice

Date: 11/11/2020

All faculties are hereby informed that, Remedial classes are important for the improvement of result so it is kind request to all the faculty members to do it as early as possible. Submit the Remedial related Documents on 17/11/2020 before 4:00 pm and Display the Remedial Classes Timetable for Weaker Students.

Regards,



Prof. R.S.Badodekar
HOD IT

IT Deapartment Remedial Classes Schedule

Session No.	Day & Date	Time	Class	Subject Name	Faculty Name
1	Wednesday(18/11/2020)	10.00 am to 12.00pm	SEIT	Discrete Mathematics	Prof.S.R.Borate
			TEIT	Theory of Computation	Prof.V.P.Tonde
			BEIT	Information & Cyber Security	Prof.S.B.Ware
2	Thursday (19/11/2020)	10.00 am to 12.00pm	SEIT	Basic Computer Network	Prof.K.S.Mulani
			TEIT	Human Computer Interaction	Prof.S.B.Ware
			BEIT	Machine Learning Applications	Prof.G.M.Gaikwad
3	Friday (20/11/2020)	10.00 am to 12.00pm	SEIT	Logic Design & Computer Architecture	Prof.A.P.Kulkarni
			TEIT	Software Engineering & Project Management	Prof.K.S.Mulani
			BEIT	Software Designing & Modeling	Prof.RS.Badodekar
4	Saturday (21/11/2020)	10.00 am to 12.00pm	SEIT	Object Oriented Programming	Prof.G.M.Gaikwad
			TEIT	Operating System	Prof.P.P.Ahire
			BEIT	Elective-II	Prof.S.B.Jadhav
5	Sunday (22/11/2020)	10.00 am to 12.00pm	SEIT	Data Structures and Algorithms	Prof.K.S.Karnekar
			TEIT	Database Management System	Prof.S.B.Jadhav
			BEIT	Elective-I	Prof.A.P.Kulkarni

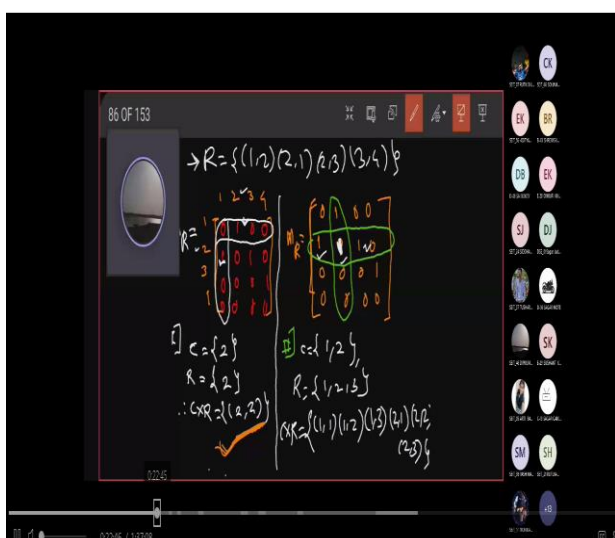
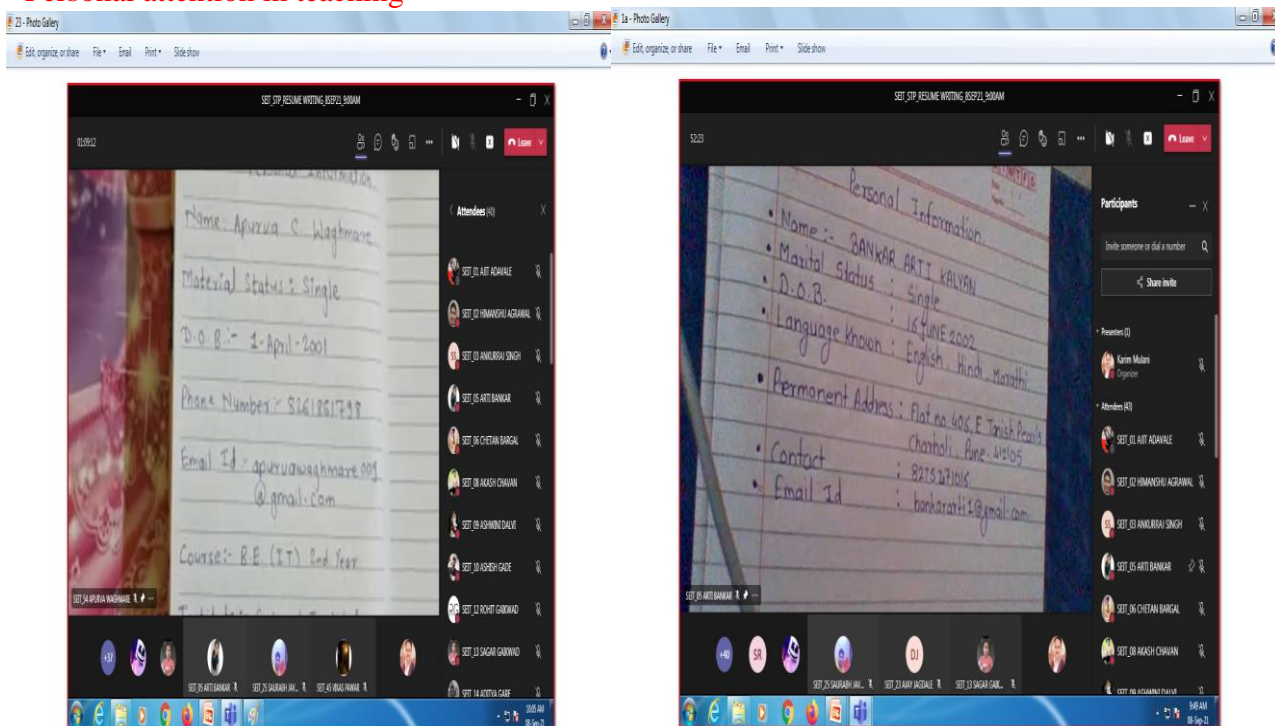


I/C Time Table
Prof. K.S.Karnekar




HOD IT
Prof. R.S.Badodekar

• Personal attention in teaching



- Extra practical sessions

 SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA DEPARTMENT OF INFORMATION TECHNOLOGY TIME TABLE: A.Y.-2020-21 TERM-I				
LAB SESSIONS : DSEIT		W.E. F. DATE:- 09/05/2021		
TIME/DAY	SUNDAY(09/05/21)	MONDAY(10/05/21)	TUESDAY(11/05/21)	WEDNESDAY(12/05/21)
09.00am to 10.30am	DSAL(KSK)	OOPL(GMG)	LDCOL(APK)	DSAL(KSK)
10.30am to 10.45am	Short Break	Short Break	Short Break	Short Break
10.45am to 12.15pm	OOPL(GMG)	LDCOL(APK)	OOPL(GMG)	LDCOL(APK)
12.15pm to 01.00pm	Lunch Break	Lunch Break	Lunch Break	Lunch Break
01.00pm to 02.30pm	LDCOL(APK)	DSAL(KSK)	DSAL(KSK)	OOPL(GMG)
02.30pm to 02.45pm	Short Break	Short Break	Short Break	Short Break
02.45pm to 04.15pm	DSAL(KSK)	OOPL(GMG)	LDCOL(APK)	
TimeTable Incharge Prof.K.S.Karnekar		HoD Prof. R.S.Badodekar		Principal Dr. M.S.Gaikwad

Extra Practical Session Time Table,20-21,Sem-2

• **Counseling – special hints and techniques(TG Scheme)**

TG Meeting Agenda

1. Inform about offline lecture(TH/PR) , admission in hostel before 15/2/21(ask one to one Student)
2. Paper Publication and project review, internship,, placement offers(BE)
3. Discuss online session attendance of the students and inform to all students about Importance of offline session attendance.
4. Ask students to collect e-content (study material-all subject) at least upto 3 unit.
5. Inform practical start from 15th Feb 2021 , collect required software for practical and Install immediately on own laptop/pc
6. Ask to registered any technical causes related to IT curriculum.(NPTEL,etc)
7. Inform to students to collect manual of practical and also inform to submit assignment on or before deadline.
8. Any plan activities under Info sit forum/ Spark club/ Business club.
9. Exam form/scholarship form submission status submission, solve queries if any.
10. Ask students and create list (submit list to Class teacher)
SE - Lab Innovation / certification course
TE- Mini Project / internship
BE- BE Project, sponsorship/ internship.
11. Inform about honor course benefits to all class.(specially TE).
Environmental studies (SE)
12. Ask attendance of previous ibm session and registered which course.
13. Discuss any point related to student benefits and academic performance.



Prof.R.S.Badodekar
HOD,IT

• Special notes

INTRODUCTION TO DATA SCIENCE AND BIG DATA

As the world entered the era of big data, the need for its storage also grew. It was the main challenge and concern for the enterprise industries until 2010. The main focus was on building framework and solutions to store data. Now when Hadoop and other frameworks have successfully solved the problem of storage, the focus has shifted to the processing of this data. Data Science is the secret sauce here. All the ideas which you see in Hollywood sci-fi movies can actually turn into reality by Data Science. Data Science is the future of Artificial Intelligence. Therefore, it is very important to understand what is Data Science and how can it add value to your business.

Topics

- How to solve a problem in Data Science?
- The need for Data Science.
- What is Data Science?
- How is it different from Business Intelligence (BI) and Data Analysis?
- The lifecycle of Data Science with the help of a use case.

How to solve a problem in Data Science?

Problems in Data Science are solved using Algorithms. But, the biggest thing to judge is which algorithm to use and when to use it?

Basically there are 5 kinds of problems which you can face in data science.



Let's address each of these questions and the associated algorithms one by one:

Is this A or B?

How much or How many?

Those of you, who don't like maths, be relieved! Regression algorithms are here!

So, whenever there is a problem which may ask for figures or numerical values, we solve it using Regression Algorithms.

For Example:

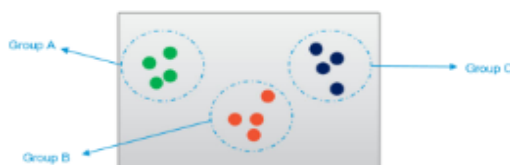
What will be the temperature for tomorrow?

Since we expect a numeric value in the response to this problem, we will solve it using Regression Algorithms.

How is this organised?

Say you have some data, now you don't have any idea, how to make sense out of this data. Hence the question, how is this organised?

Well, you can solve it using clustering algorithms. How do they solve these problems? Let's see:



Clustering algorithms group the data in terms of characteristics which are common. For example in the above diagram, the dots are organised based on colors. Similarly, be it any data, clustering algorithms try to apprehend what is common between them and hence "clusters" them together.

The next and final kind of problem in this Data Science Tutorial, that you may encounter is,

What should I do next?

Whenever you encounter a problem, wherein your computer has to make a decision based on the training that you have given it, it involves Reinforcement Algorithms.

- Question bank

Business Analytics and Intelligence University Questions

UNIT -1: Decision Making and Decision Support Systems

	Aug 2018 [In sem]	Marks
Q.1	Explain the four stages of Simon's decision making process.	[06]
Q.2	Explain the role of decision support system with its main components.	[04]
Q.3	What is the role of computerized support for decision making?	[04]
Q.4	Explain various decision making styles.	[06]
	Nov Dec 2018 [End sem]	
Q.5	Explain the role of decision support system with its main components?	[06]
Q.6	Explain the four stages of Simon's decision making process.	[04]
	May June 2019 [End sem]	
Q.7	What are various types of decisions? Explain the process through which the decisions are done by Managers.	[06]
Q.8	Explain the four stages of Simon's decision making process.	[04]
	Oct 2019 [In sem]	
Q.9	Design & Illustrate decision support systems (DSS) for Bank loan officer verifying the credits of a loan applicants.	[10]
Q.10	Draw and explain DSS with its components?	[06]
Q.11	Explain four stages of Simon's Model of decision making?	[04]
	Nov Dec 2019 [End sem]	
Q.12	What is DSS? Explain various decision making styles.	[04]
Q.13	What is computerized DSS and what are the benefits of using computerized DSS by the manager.	[05]

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Department of Information Technology

- Assignments and solving University question papers

UNIT NO.4: BIG DATA ANALYTICS

Syllabus

Data analytics life cycle, Data cleaning , Data transformation, Comparing reporting and analysis, Types of analysis, Analytical approaches, Data analytics using R, Exploring basic features of R, Exploring R GUI, Reading data sets, Manipulating and processing data in R, Functions and packages in R, Performing graphical analysis in R, Integrating R and Hadoop, Hive, Data analytics.

UNIVERSITY QUESTIONS

	May 2018 [End sem]	Marks
Q.1	What is data preparation? Explain its types with suitable example.	[08]
Q.2	Explain the different modes of data transformation in big data.	[08]
Q.3	What is the need of big data analysis? Explain the different types of analysis techniques.	[08]
Q.4	Explain the data analysis life cycle in big data.	[08]
	Nov Dec 2018 [End sem]	
Q.5	What is need of integrating R and Hadoop? Explain the process of R and Hadoop integration.	[09]
Q.6	How missing values and categories variable are preprocessed before building model? Explain with example.	[09]
Q.7	Explain different types of analysis in detail with example.	[09]
Q.8	Explain different techniques of data visualization in detail.	[09]
	Nov Dec 2019 [End sem]	
Q.9	Explain different steps in Data Analytics project life cycle.	[08]
Q.10	Explain different kinds of Data Analysis.	[08]
Q.11	Draw and explain Architecture of HIVE.	[08]
Q.12	Write a user defined function to calculate a cube of given number in R.	[08]



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Department of Information Technology

Sample Solution

Q.2 Explain the different modes of data transformation in big data. [08]

Solution: Different modes of data transformation in big data

1. Data discovery
2. Data mapping
3. Code generation
4. Code execution
5. Data review

1. Data discovery: Is the first step in the data transformation process. Typically, the data is profiled using profiling tools or sometimes using manually written profiling scripts to better understand the structure and characteristics of the data and decide how it needs to be transformed. In the data transformation flow begins when you identify and truly understand the information within its source format. Data profiling tools do this, which allows an organization to determine what it needs from the data in order to convert it into the desired format.

2. Data mapping

Is the process of defining how individual fields are mapped, modified, joined, filtered, aggregated etc. to produce the final desired output. Developers or technical data analysts traditionally perform data mapping since they work in the specific technologies to define the transformation rules (e.g. visual ETL tools, transformation languages). The data mapping phase of the data transformation flow lays out an action plan for the data. Data mapping is often the most expensive and time-consuming portion of an integration strategy because it encompasses validation, translation, value derivation, enrichment aggregation, and routing.

3. Code generation

Is the process of generating executable code (e.g. SQL, Python, R, or other executable instructions) that will transform the data based on the desired and defined data mapping rules? Typically, the data transformation technologies generate this code based on the definitions or metadata defined by the developers. When information must be converted, a code must first be created that actually runs the data transformation "job." Centralized integration platforms are able to generate the code to simplify the task for enterprises.

4. Code execution

Is the step whereby the generated code is executed against the data to create the desired output. The executed code may be tightly integrated into the transformation tool, or it may require separate steps by the developer to manually execute the generated code. Once the code has been created and the data transformation procedure is fully planned, it's time to execute the code. The code is put into motion and converts the data to your desired output.

5. Data review

Is the final step in the process, which focuses on ensuring the output data meets the transformation requirements. It is typically the business user or final end-user of the data that performs this step. Any anomalies or errors in the data that are found and communicated back to the developer or data analyst as new requirements to be implemented in the transformation process.

Q.3 What is the need of big data analysis? Explain the different types of analysis techniques. [08]

Solution: Need of Big Data Analytics

The Big Data analytics is indeed a revolution in the field of Information Technology. The use of Data analytics by the companies is enhancing every year. The primary focus of the companies is on customers. Hence the field is flourishing in Business to Consumer (B2C) applications. We divide the analytics into different types as per the nature of the environment. There are three divisions of Big Data analytics: Prescriptive Analytics, Predictive Analytics, and Descriptive Analytics.



Fig1. Need of Big Data Analytics

Big data analytics helps organisations harness their data and use it to identify new opportunities. That, in turn, leads to smarter business moves, more efficient operations, higher profits and happier customers.

• Guidance for Seminar/Project presentation

SINHGAD INSTITUTE OF TECHNOLOGY LONAVALA
 Department of Information Technology

PROJECT REVIEW – I
 (Academic Year: 2020-21)

Group Id :	08	Date :	
Project Title :	CIVIL ENGINEERING ANALYSIS AND PREDICTION OF CRACKS IN CONCRETE USING MATHEMATICAL MODELS		
Sr.No.	Roll No.	Student Name	Contact Details
1	19	NOMESH KATKAR	9824128518
2	22	APRIMA LAWATE	9698375987
3	28	SALIL HOSKAR	9962114479
4	30	SANTOSH TAKLE	9282340981
		Internal / External Guide Details	
		Guide Name : M.S. GURJESH	
		Mentor Name, email & Mobile No. :	

25 Marks

REVIEW – I CHECKLIST : FINALIZATION OF SCOPE

PROJECT STATEMENT

1. Is the statement short and concise (10-20 words maximum)?
2. Does the statement gives clear indication about what your project will accomplish?
3. Can a person who is not familiar with the project understand scope of the project by reading the Project Problem Statement?

REQUIREMENT: SCOPE AND OBJECTIVES

Does the Scope and Objectives establish the "context" for the proposed project by referencing to the following elements:

- a. Are all aspects of the requirements document (i.e., Functional Spec.) addressed in the design?
- b. Is the architecture / block diagram well defined and understood?
- c. The project's objective of study (what product, process, resource etc.) is being addressed?
- d. The project's purpose: is the purpose of project addressed properly (why it's being pursued: to evaluate, reduce, increase, etc.)?
- e. The project's viewpoint: is the project's viewpoint is understood? (Who is the project's end user)?
- f. Is the project goal statement is in alignment with the sponsoring organization's business goals and mission?

ANALYSIS

1. Is information domain analysis complete, consistent and accurate?
2. Is problem statement categorized in identified area and targeted towards specific area therein?
3. Are external and internal interfaces properly defined?
4. Does the Use Case Model properly reflects the actors and their roles and responsibilities?
5. Are all requirements traceable to system level?
6. Is similar type of methodology / model is used for existing work?
7. Are requirements consistent with schedule, resources and budget?

SINHGAD INSTITUTE OF TECHNOLOGY LONAVALA
 Department of Information Technology

PROJECT REVIEW – I
 (Academic Year: 2020-21)

Group Id :	10	Date :	
Project Title :	Automatic Detection of Covid-19 using X-ray Images & CNN		
Sr.No.	Roll No.	Student Name	Contact Details
1	B309	Ankush Kumar	7918267902
2	B108	Amal Kumar	7038257782
3	B123	Tejas Tare	9765639581
4	B126	Rishab Kumar	8398185111
		Internal / External Guide Details	
		Guide Name : DR. K.S. Karmakar	
		Mentor Name, email & Mobile No. :	

25 Marks

REVIEW – I CHECKLIST : FINALIZATION OF SCOPE

PROJECT STATEMENT

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Department of Computer Engineering


- Remedial Make up class/Extra class

Remedial class Notice

Date: 11/10/2020

Respected All,


Remedial classes are important for the improvement of result so it is kind request to all the faculty members to do it as early as possible. Submit the Remedial related Documents ones the class is conduct on 19/11/2020 before 4:00 pm and Display the Remedial Classes Timetable for Weaker Students.



Regards,
Prof. Maske R.A.

Remedial Class Timetable

Date-17/11/2020

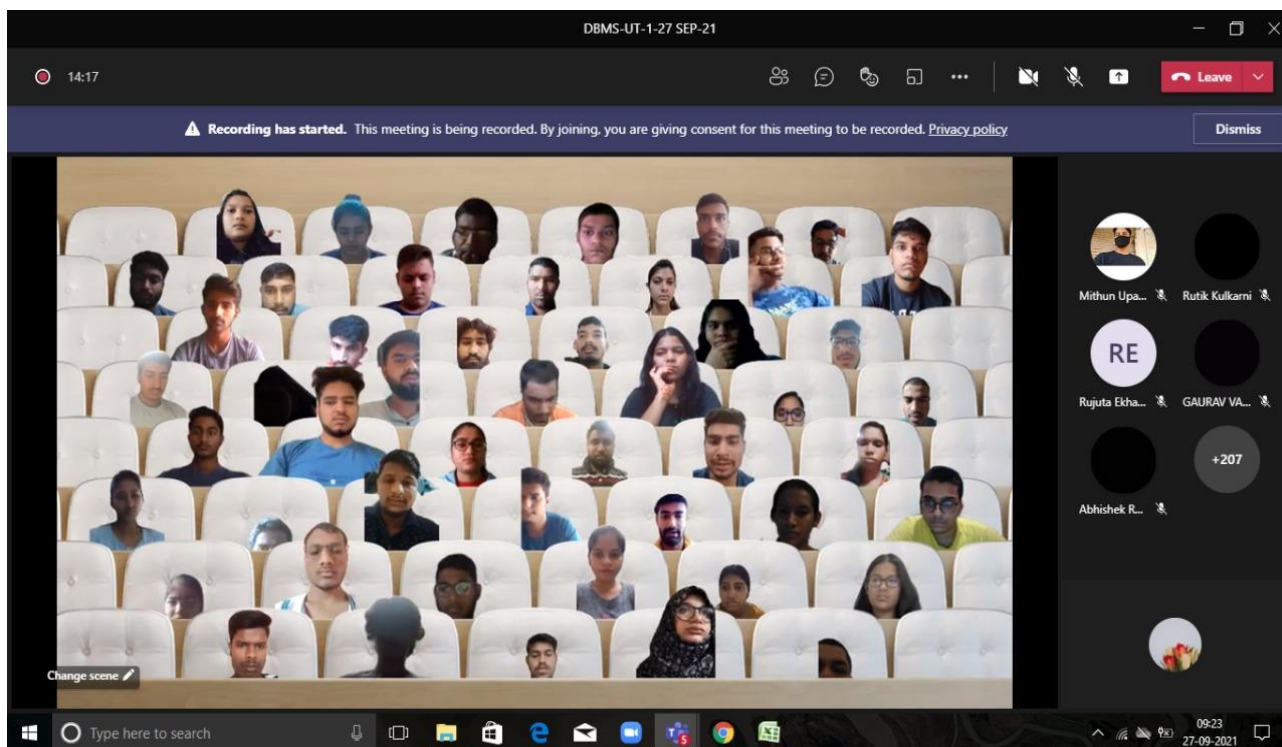
CLASS/TIME	SE	CLASS/TIME	TE
11.00 AM TO 12.00PM	18/11/2020 DMA-PU	11.00 AM TO 12.00PM	18/11/2020 TOC-MNG
12.00 PM TO 1.00PM	18/11/2020 DELD-NKP	12.00 PM TO 1.00PM	18/11/2020 DBMS-RAM
LUNCH BREAK			
2.00PM TO 3.00PM	18/11/2020 DSA-RSS	2.00PM TO 3.00PM	18/11/2020 SEP-SBW
3.00PM TO 4.00PM	18/11/2020 OOP-MNK	3.00PM TO 4.00PM	18/11/2020 CN-MSC
4.10PM TO 5.10PM	18/11/2020 COA-AVS	4.10PM TO 5.10PM	18/11/2020 ISEE-SBN


Prof. R. A. Maske
Timetable Incharge
SIT, Lonavala



Dr. S. D. Babar
HOD, CE
SIT, Lonavala


- **Personal Attention in teaching**


Faculty members engage students in activities like Mid Lectures Activities, Presentations in between lectures, Surfing of E media, Short tests etc. and end lectures with Summary of Sessions.



- Extra Practical session:

 Sinhgad Institutes					SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA DEPARTMENT OF COMPUTER ENGINEERING UG CLASS MASTER TIME TABLE FOR PRACTICAL												
Semester II																	
TIME/DAY	04-06-2021	04-07-2021	04-08-2021	04-09-2021	04-12-2021	TIME/DAY	04-06-2021	04-07-2021	04-08-2021	04-09-2021	04-12-2021	TIME/DAY	04-06-2021	04-07-2021	04-08-2021	04-09-2021	04-12-2021
SE-A						SE-B						SE-C					
10.00am TO 12 noon	PBL-II-PVR	DSAL-RSS	MAL-SBN	PBL-II-PVR	DSAL-RSS	10.00am TO 12 noon	PBL-II-SSS	DSAL-BLD	MAL-VMC	PBL-II-SSS	DSAL-BLD	10.00am TO 12 noon	BCL-VMC	DELD-NKP	DSL-SDB	DELD-NKP	CGL-SRP
1.00Pm TO 3.00 Pm	DSAL-RSS	MAL-SBN	DSAL-RSS	PBL-II-PVR	PBL-II-PVR	1.00Pm TO 3.00 Pm	DSAL-BLD	MAL-VMC	DSAL-BLD	PBL-II-SSS	PBL-II-SSS	1.00Pm TO 3.00 Pm	DSL-SDB	CGL-SRP	CGL-SRP	DSL-SDB	DSL-SDB
TE-A						TE-B						TE-C					
10.00am TO 12 noon	SPOSIL-SGS	WTL-RAM	SPOSIL-SGS	ESIOTL-NPK	SPOSIL-SGS	10.00am TO 12 noon	SPOSIL-RDK	WTL-MNK	SPOSIL-RDK	ESIOTL-MSC	SPOSIL-RDK	10.00am TO 12 noon	SPOSIL-NNP	WTL-DAY	SPOSIL-NNP	ESIOTL-SNL	SPOSIL-NNP
1.00Pm TO 3.00 Pm	ESIOTL-NPK	SPOSIL-SGS	WTL-RAM	SPOSIL-SGS	WTL-RAM	1.00Pm TO 3.00 Pm	ESIOTL-MSC	SPOSIL-RDK	WTL-MNK	SPOSIL-RDK	WTL-MNK	1.00Pm TO 3.00 Pm	ESIOTL-SNL	SPOSIL-NNP	WTL-DAY	SPOSIL-NNP	WTL-DAY
BE-A						BE-B						BE-C					
10.00am TO 12 noon	LP-IV-SBW	LP-IV-SBW	LP-IV-SBW	LP-IV-SBW	LP-IV-SBW	10.00am TO 12 noon	LP-IV-NKP	LP-IV-NKP	LP-IV-NKP	LP-IV-NKP	LP-IV-NKP	10.00am TO 12 noon	LP-IV-DAY	LP-IV-SBW/NKP/DAY	LP-IV-SBW/NKP/DAY	LP-IV-SBW/NKP/DAY	LP-IV-SBW/NKP/DAY
1.00Pm TO 3.00 Pm	LP-III-VND	LP-III-VND	LP-III-VND	LP-III-VND	LP-III-VND	1.00Pm TO 3.00 Pm	LP-III-VSK	LP-III-VSK	LP-III-VSK	LP-III-VSK	LP-III-VSK	1.00Pm TO 3.00 Pm	LP-III-MNG	LP-III-MNG	LP-III-MNG	LP-III-MNG	LP-III-MNG


Prof. R.A. Maske
 Timetable Incharge
 SIT, Lonavala


Dr. S. D. Babar
 HOD, CE
 SIT, Lonavala


Dr. M.S. Gaikwad
 PRINCIPAL
 SIT, Lonavala



- Counseling through TG Schemes


Teacher guardian acts as a mentor to students and offers them emotional and academic support along with motivation.

10th October 2020

LG Agenda

- Unit test discussion: Absent students for UT have to submit all Division subject papers with all options.
For SE : 2 Papers
TE : 3 Papers
BE : 2 Papers
- Students having less than 50% attendance will have to attend next LG meeting strictly with their parents.
- Motivate them for NPTEL courses and other online courses. If they have done any online course tell them to submit certificate to LG.
- inform them about the dept magazine whose info we had circulated on students group. motivate students to contribute.
- If anyone want to become a member of ACES committee contact to Prof. S. B. Waikar
- Students should do registration and pay fees




Prof. M.N. Gaikwad
 LG Coordinator


Dr. S. D. Babar
 HOD Computer Engg.



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Department of Computer Engineering

Study Material-Special Notes : Solution of university paper

UNIT II

University asked questions

Que1 Why class diagram is important in static modelling? Explain different relationships used in class diagram? [5]

Ans In static modelling we capture static view of the system. Structure of the system that does not change with time is modeled in static modeling. The concepts of problem are translated into designing constructs called classes. The class diagrams are widely used in the modelling of object oriented systems because they are the only UML diagrams which can be mapped directly with object oriented languages.

Relationships used in class diagram

- Dependency
- Association
- Generalization
- Realization
- Aggregation
- Composition

1 Dependency: One class use another class some way i.e. one class depends on other class for some functionality.

```

classDiagram
    Client ..> Supplier : Dependency
  
```

2 Association: It shows conceptual connection between two classes

```

classDiagram
    Manager --> Employee : Manages >
    Employee --> Manager : <Work under
  
```

3 Generalization relationship between a more general classifier and more specific classifier.

```

classDiagram
    Vehicle <|-- Car
    Vehicle <|-- Boat
  
```

4 Realization: denotes the implementation of the functionality defined in one class by another class

```

classDiagram
    Mammal <|.. Human
    Mammal <|.. Giraffe
  
```

```

classDiagram
    College "1" *-- "*" Teacher
  
```

6 Composition: It is strong form of association. In this part is depending on whole means if whole is destroyed part is also destroyed.

```

classDiagram
    Building "1" *-- "*" Flat
  
```

Que2 Explain the application of composite structure diagram. [5]

Ans A composite structure diagram is a UML structural diagram that contains classes, interfaces, packages, and their relationships, and that provides a logical view of all, or part of a software system. It shows the internal structure (including parts and connectors) of a structured classifier or collaboration. UML 2 composite structure diagrams are used to explore run-time instances of interconnected instances collaborating over communications links.

```

classDiagram
    Student --> Enroll : applicant
    Seminar --> Enroll : Desired seminar
    Enrollment --> Enroll : registration
    Enroll --> Student : Prerequisites: seminars
    Enroll --> Seminar : Seats: Integer
    Enroll --> Enrollment : course requisites: courses
  
```

Composite structure diagram for enrolling in a seminar.

Que3 Explain the difference between component diagram and deployment diagram in UML. [5]

Sr.no	UML Component Diagram	UML Deployment Diagram
1	It models the physical implementation of the software (file resources).	It describes the physical resources of system (hardware).
2	Models the high level software components and their interfaces.	Software runs on nodes, Nodes can be Client, Storage device, Server. etc.
3	Dependencies are designed such that they can be tested or independently re-usable.	Shows physical arrangement of run-time computational resources such as servers.

• **Question Bank**

University Questions


UNIT -1

	April 2018 [Insem]	Marks
Q.1	1. Define the terms : <ul style="list-style-type: none"> • Website • Web page • web server • URL and • Home page 	[05]
Q.2	Explain the difference between external and internal DTDs.	[05]
Q.3	What are XML schemas? How are they better than DTDs?	[05]
Q.4	List and describe any five HTML tags.	[05]
	May 2018 [Endsem]	[06]
Q.5	List and discuss the different design issues in web development.	[05]
Q.6	Write at least any five Differences between HTML and HTML5.	[05]
	Nov Dec 2018 [Endsem]	[05]
Q.7	Discuss the XSLT technology with an example.	[05]
Q.8	Describe the steps involved when a web browser requests for and obtains a web page from a web server	[05]
	April 2019 [Insem]	
Q.9	What are the strengths of XML technology? Explain the need for XML	[06]
Q.10	What are the DTDs? Explain how do they work?	[04]
Q.11	What are the strengths of XML technology? Also list the limitations of using XML.	[08]
Q.12	List and discuss the different design issues in web development.	[02]
	May 2019 [Endsem]	
Q.13	What are XML schemas? How are they better than DTDs?	[06]
Q.14	Write at least any five Differences between HTML and HTML5.	[05]
	Nov Dec 2019 [Endsem]	
Q.15	Discuss the XSLT technology with an example.	[07]
Q.16	Describe the steps involved when a web browser requests for and obtains a web page from a web server	[07]

UNIT-II

	Insem 2019	Marks
Q.1	When to use JQuery? What are the advantages of using JQuery over java script.	[5M]


- Guidance for Seminar /Project Presentation



STES'S SINHGAD INSTITUTE OF TECHNOLOGY
 KUSGAON (BK), LONAVALA, PUNE- 410401
 SAVITRIBAI PHULE PUNE UNIVERSITY
 2020-2021

VIRTUAL TOURIST GUIDE

Group No.-36

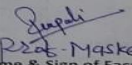
Guide: 
 (Prof. R.A. Maske)

SAMEER SHAIKH	Exam No: (B150424355)
ABDUL HANNAN SIDDIQUI	Exam No: (B150424201)
KHAN SHADAB	Exam No: (B150424272)
ANVIT PATIL	Exam No: (B150424326)

Activate Windows
Go to Settings to activate Windows.

- Additional Mock/Practical

SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA DEPARTMENT OF COMPUTER ENGINEERING MOCK ORAL EXAM AY- 2020-21 (SEM - I)				
CLASS: T.E-B BATCH: TEB4			Subject: - DBMS	
Day :- 24/10/20 - Friday			Date: 24/10/20	
Sr.No	Roll No.	Name Of The Student	Sign	MARKS O/F 10
1	TCB61	TAYADE NIKHIL ISHWARLAL (DA)	P	9
2	TCB62	UKAYE TABISH AIZAZ (DA)	P	7
3	TCB63	LONKAHANDE VISHAL ABASAHEB	P	7
4	TCB64	CHINDAGE RUSHIKESH BABURAO	P	10
5	TCB65	HADAWANE KOMAL SITARAM	P	7
6	TCB66	KENEKAR VIRAJ SANJAY (DA)	P	10
7	TCB67	KHAN AZHAR HASAN (DA)	P	7
8	TCB68	SONAR TEJASHREE ANAND (DA)	P	7
9	TCB69	PRATHAMESH DESAI	P	8
10	TCB70	PAWAR PRAJYOT GUNTAJI	P	8
11	TCB71	PUSHKAR DINESH WARKE	P	7
12	TCB72	RAGHUVANSHI RADHIKA SANJEEV	P	7
13	TCB73	SAGARE KARAN TULASHIRAM	P	7
14	TCB74	SHASHWAT PATEL	P	9
15	TCB75	SURYAWANSHI PRAKASH	P	9
16	TCB76	THUBE PRAMOD JAYASHING	P	9
17	TCB77	TORMAL SHUBHAM BABAN	P	8
18	TCB78	PAWAR NEHA YUVRAJ	P	9
19	TCB79	ZAGADE BHUSHAN SANJAY	P	9


 Name & Sign of Faculty

- Unit wise tutorial Conducted

ENGINEERING MATHEMATICS-III (207003)

Unit 1: Linear Differential Equations

TUTORIAL 1

- Q1. Solve $\frac{d^2y}{dx^2} + \frac{dy}{dx} + y = x \sin x$
- Q2. Solve by using method of variation of parameter $\frac{d^2y}{dx^2} - 6 \frac{dy}{dx} + 9y = e^{3x}$
- Q3. Solve $x^3 \frac{d^3y}{dx^3} + 2x^2 \frac{d^2y}{dx^2} + 2y = 10(x + \frac{1}{x})$
- Q4. Solve $(1+x)^2 \frac{d^2y}{dx^2} + (1+x) \frac{dy}{dx} + y = 2 \sin[\log(1+x)]$
- Q5. Solve $\frac{dx}{y^2} = \frac{dy}{x^2} = \frac{dx}{x^2 y^2 x^2}$

A-73

Unit 1:- Linear Differential Equations
TUTORIAL - 1

Names:- Khot Noor'in Nagin
Roll NO:- SE A 73

Q.1) Solve $\frac{d^2y}{dx^2} + \frac{dy}{dx} + y = x \sin x$

Solⁿs = Given D.E. is

$$\frac{d^2y}{dx^2} + \frac{dy}{dx} + y = x \sin x$$

$$(D^2 + D + 1)y = x \sin x$$

auxiliary equation is

$$D^2 + D + 1 = 0$$

$$D = \frac{-1 \pm \sqrt{1-4}}{2}$$

$$D = \frac{-1}{2} \pm \frac{i\sqrt{3}}{2}$$

$$C.F. = e^{-1/2x} [C_1 \cos(\frac{\sqrt{3}}{2}x) + C_2 \sin(\frac{\sqrt{3}}{2}x)]$$

P.I. = $\frac{1}{\phi(D)} f(x)$

$$= \frac{1}{D^2 + D + 1} x \sin x$$



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website : sit.sinhgad.edu

Department of Electronics and Telecommunication Engineering

- **Assignment and Question Bank**

All the Students must solve two Questions Sequentially according to your roll no. as 01 will solve Q.1& 2, roll No 3 will Solve Q 5&6 and so on ,

Unit-I: Introduction to Microcontroller Architecture

1. Differentiate between Microprocessor and Microcontrollers
2. Explain the important features of architecture of 8051
3. Draw and explain the block diagram of 8051 in short [May 2014, Aug. 2017]
4. Explain PSW of 8051 with concept of Bank selection [May 2014, May 2016, Dec 16]
5. Draw and explain programming model of 8051 in detail [Dec 2018]
6. Explain the special function register TMOD, SCON and PSW of 8051. [Aug.2019]
7. Draw and explain pin out diagram of MCS-51 microcontroller
8. Draw internal memory structure of MCS-51 [May 2011, Oct 2011, Nov 2015, Dec 2017]
9. Explain Memory Organization of 8051 [May 2019, Dec 2019]
10. Draw and explain in depth functional diagram of Timer/Counter [Aug.2017]
11. Draw and explain programming model of 8051 [May 2017-6M]
12. Write an ALP to generate delay of 1 msec using timer 1 mode1, use Fosc=11.0592 MHz
13. Write an embedded C program to toggle Port bits of P1.5 every 250 ms.
14. Explain modes of operations of Timers available in 8051 [May 2019]
15. Write an embedded C program to generate square wave of 1Hz on P1.0 pin using Timer0 assume clock frequency of 12 MHz. [Aug 2019]
16. Describe the values to be loaded in TH, TH and TM, for calculation of 1ms delay, using Timer1(clock frequency=10 MHz) [Aug 2016]
17. Explain operation of timer mode 2. With TMOD register
18. Write an embedded C program to transmit "GOD" serially at baud rate 9600 continuously with one stop bit [Aug. 2017]

- **Sample Oral Questions**

1. What is the length of data bus in 8051?
2. How will you decide the memory addressing capability in microcontroller?
3. How many accumulators are in 8051?
4. Specify the memories available in 8051
5. What is the role of SFR?
6. What is addressing mode, specify
7. How will you access the SFRS?
8. Why port0 does not have internal pull-up register
9. How will you configure ports as input and output?
10. State by default values after power on reset

11. How will you access the program and data memory?



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- Assignment Submitted by Student

Q.1] Differentiate between Microprocessor and Microcontroller.

⇒ Microprocessor

- It is heart of the computer.
- Memory, I/O Ports, timers interrupts are not available inside the chip.
- Cannot be used in compact system and hence inefficient.
- Cost of entire system increases.
- Due to external components power consumption is high.
- Most of microprocessor do not have power saving feature.
- Relatively slower.
- Used by personal computers and laptops.

Microcontroller

- It is heart of the embedded system.
- All are integrated inside the microcontroller chip.
- Can be used in compact system and hence efficient.
- Cost of entire system is low.
- Since external components are low, total power consumption is less.
- Most of microcontroller have power saving mode.
- Speed is fast.
- Used by microwave oven and washing machine.

• Sample notes

Timers and counters in 8051 UNIT-2 ①

8051 has two 16 bit Timer/counter (T₀, T₁)

→ It can be programmed by software or hardware.

- It has two SFR's (TMOD - divided timer/counter, operation)
TRCON - check for flag status (start time)
- Timer is used for delay generation (internal source) counter - external event counting (Ext-source)

TMOD -

Gate	C/T	M ₁	M ₀	Gate	C/T	M ₁	M ₀
------	-----	----------------	----------------	------	-----	----------------	----------------

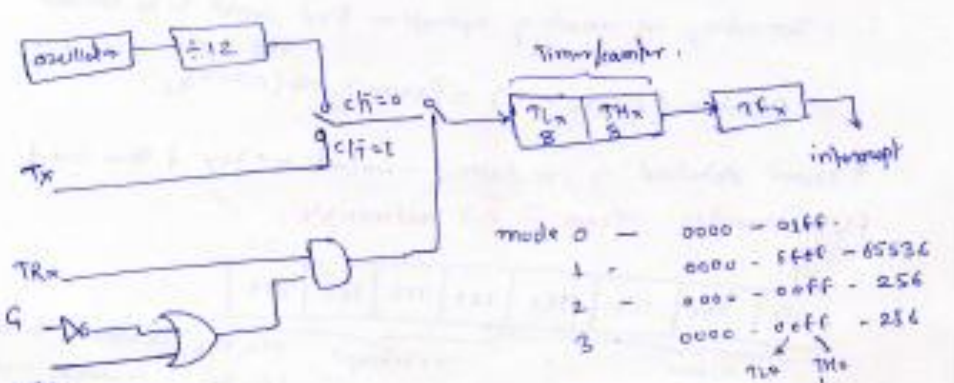
C/T = 0 - Timer operation - internal clock source
 = 1 - Counter operation - external event counter.

Gate : 0 - Software control of timer & counter (TR0, TR1).
 1 - Hardware control (INT0, INT1)

M ₁	M ₀	mode
0	0	0
0	1	1
1	0	2
1	1	3

mode 0 - 13 bit prescaler (TLx = 6bit, THx = 8bit).
mode 1 - 16 bit general (TLx = THx = 8bits).
mode 2 - 8 bit auto reload (THx → TLx).
mode 3 - 8 bit split - TL0 → TH0, TH1 → TH1

In General timer mode 1 is preferred for delay operation.



mode 0 - 0000 - off.

1 - 0001 - 65536

2 - 0010 - 256

3 - 0011 - 256

TL0 → TH0
TH1 → TH1



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- **Important Points to remember**

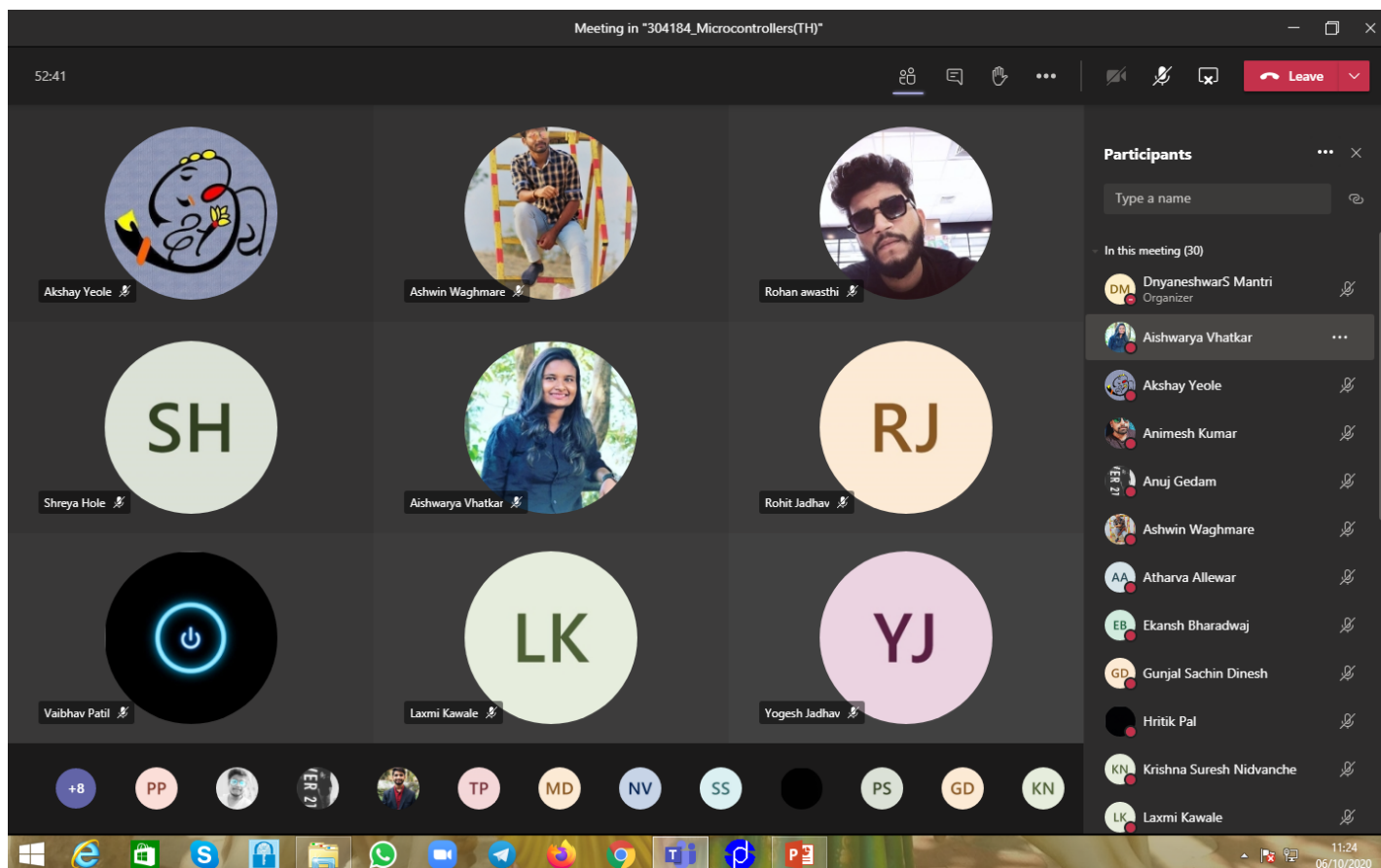
1. 8051 uses Harvard architecture with CISC instruction set architecture
2. Reset requires Two Machine cycles
3. Clock is 11.0592 MHz – to obtaining Standard Baud rate default value
4. Has two Accumulators A, B
5. Has 32 registers with 21 SFRs,
6. 2 , 16- Timer / counter with 4 Modes of Operation
7. Timer1 in Mode 2 is always preferred in serial communication
8. Calculations of TH1 $f_{\text{baud}} = (2^{\text{SMOD}} / 32) * (f_{\text{osc}} / 12 (256 - \text{TH1}))$
9. Each interrupt as the vector address up to 0030 h.
10. The maximum external memory addressing capability is 64 KB
11. 8051 has Five interrupts , INT0,INT1, TF0,TF1, TI/RI

- **Re-test for improvement**

- १ नवंबर

- [illegible]

• **Counselling through TG meeting**



Meeting Attendance

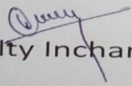
Full Name	User Action	Timestamp
DnyaneshwarS Mantri	Joined	10/06/2020, 11:41:20 AM
Rohan awasthi	Joined before	10/06/2020, 11:41:20 AM
Trupti Phand	Joined before	10/06/2020, 11:41:20 AM
Atharva Allewar	Joined before	10/06/2020, 11:41:20 AM
Arjun Sawaiyan	Joined before	10/06/2020, 11:41:20 AM
Mansi Dabhade	Joined before	10/06/2020, 11:41:20 AM
Amol Kute	Joined before	10/06/2020, 11:41:20 AM
Anuj Gedam	Joined before	10/06/2020, 11:41:20 AM
Shubham Parab	Joined before	10/06/2020, 11:41:20 AM
Mehdi RasooljiValiji	Joined before	10/06/2020, 11:41:20 AM
Vaibhav Patil	Joined before	10/06/2020, 11:41:20 AM
Sayali Sonawane	Joined before	10/06/2020, 11:41:20 AM


Laxmi Kawale	Joined before	10/06/2020, 11:41:20 AM
Aishwarya Vhatkar	Joined before	10/06/2020, 11:41:20 AM
Ekansh Bharadwaj	Joined before	10/06/2020, 11:41:20 AM
Pranita Petkar	Joined before	10/06/2020, 11:41:20 AM
Lochan Sawant	Joined before	10/06/2020, 11:41:20 AM
Shreya Hole	Joined before	10/06/2020, 11:41:20 AM
Dhruv Kumar	Joined before	10/06/2020, 11:41:20 AM
Abhijeeth Ramachandran N	Joined before	10/06/2020, 11:41:20 AM
Nayan Vaswani	Joined before	10/06/2020, 11:41:20 AM
Rahul Sah	Joined before	10/06/2020, 11:41:20 AM
Shubham Bhosale	Joined before	10/06/2020, 11:41:20 AM
Rohit Jadhav	Joined before	10/06/2020, 11:41:20 AM
Ashwin Waghmare	Joined before	10/06/2020, 11:41:20 AM
Akshay Yeole	Joined before	10/06/2020, 11:41:20 AM
Krishna Suresh Nidvanche	Joined before	10/06/2020, 11:41:20 AM
Prathamesh Shinde	Joined	10/06/2020, 11:41:45 AM
Prathamesh Shinde	Left	10/06/2020, 11:56:43 AM
Pratik Walde	Joined	10/06/2020, 11:42:15 AM
Gunjal Sachin Dinesh	Joined	10/06/2020, 11:43:48 AM
Animesh Kumar	Joined	10/06/2020, 11:43:49 AM
Animesh Kumar	Left	10/06/2020, 11:51:20 AM
Animesh Kumar	Joined	10/06/2020, 11:53:46 AM
Sonali Gupta	Joined	10/06/2020, 11:44:39 AM


• Remedial Actions

T.E. REMEDIAL CLASSES NOTICE

All Failed students in examination of T.E.Sem-II subjects are hereby informed that Remedial classes will start from 27/4/2021. All students must register their names to T.E. Teacher Guardians on or before 26/4/2021 Detail schedule will be displayed soon.


 Faculty Incharge


 Mechanical Engineering Department

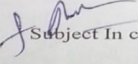

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Action Plan for Remedial classes
(AY- 2020-21)

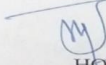
The remedial classes for B.E, Subject- FEA are combined to all divisions on following dates from 5.00 pm to 6.00 pm.

Location : D-102

Sr. No.	Plan	Date	Faculty
1	Unit no. 1 to 3 revision, notes and important question sharing. Tricks to write answers.	12/11/2021	Prof.Swapnil Shinde
2	Unit no. 4 revision, notes and important question sharing. Tricks to write answers.	13/11/2021	Prof.Swapnil Shinde
3	Unit no. 5 revision, notes and important question sharing. Tricks to write answers.	14/11/2021	Prof.Swapnil Shinde
4	Unit no. 6 revision, notes and important question sharing. Tricks to write answers.	15/11/2021	Prof.Swapnil Shinde
5	Revision and important trick sharing	16/11/2021	Prof.Swapnil Shinde


 Subject In charge,


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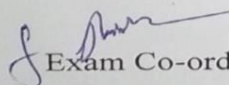
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Gat No.309/310, Off Pune-Mumbai Express Way,
Kusgaon (Bk) Lonavala-410401, Email : principal_sit@sinhgad.edu
DEPARTMENT OF MECHANICAL ENGINEERING

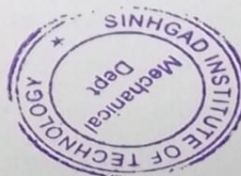
Date : 5th Oct 2021

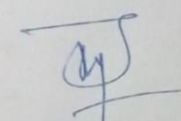
RETEST OF UNIT TEST-I
(AY 2020-21)

The Students of **Third Year** who were **Absent and Failed** in Prelim exam, are hereby informed that **Retest of Prelim exam** is Scheduled On **9th And 10th Oct 2021**.


DAY	DATE	TIME	TE-A	TE-B
Monday	9 th Oct 2021	04:00P.M.-5:00P.M.	DME-I	DME-I
Tuesday	10 th Oct 2021	04:00P.M.-5:00P.M.	TMM	TMC


Exam Co-ordinator




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- Personal Attention through TG.



Sinhgad Institutes

SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA
 Department of Mechanical Engineering


Students meeting Record (Academic year 2020)

TG meeting No.1


date: 09/02/2021


TG meeting agenda	Roll NO	Sign	Roll no	Sign	Remark
<p>1. All TG are requested to discuss with your students regarding registration for their respective year by paying fees without any delay</p> <p>2. Discuss with student regarding Examination form filling and submission using student's app</p> <p>3. As per SPPU circular, Physical reporting to the college is from 15/02/2021. Make them to ensure to be present from the same day</p> <p>4. Discuss with the TE students regarding Minor Course selection in detail and clear their doubt if any</p> <p>5. Inform all students that from 10/02/2021, Mess and hostel facility will be available in the campus. So, ask them to take admission for the same.</p> <p>6. Discuss with BE students about the update of their project and guide them to complete in time.</p> <p>7. Discuss with the students about their social responsibility in current Pandemic situation; ask them to wear mask during their physical presence in the college as well as in the campus and outside the campus.</p> <p>And ensure them that institute has taken all necessary action to take care of students in their physical presence, so ask them to be present from 15/02 without any fear.</p>	01	[Signature]			<p>- All points are discussed</p> <p>- Student queries are solved</p> <p>- Try to solve Indrag problem of student.</p>
	03	[Signature]			
	08	[Signature]			
	04	[Signature]			
	06	[Signature]			
	05	[Signature]			
	11	[Signature]			
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	21	[Signature]			
	23	[Signature]			
	28	[Signature]			
	25	[Signature]			
07	[Signature]				
30	[Signature]				

This is must	
Total no of students	30
Total present	27
Total absent	03



Clerk T. G.





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• Glimpses of Online T.G. Meeting



Above image describes the online TG meeting by Microsoft teams where points were discussed by Prof. Y.M.Raut.



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Department Mechanical Engineering

- **Special Study Material**

Subject: Energy Engineering (402047)
Chapter-1: Introduction and Thermal Power Plant

Global power generation scenario

World energy consumption is the total energy produced and used by the entire human civilization. Typically measured per year, it involves all energy harnessed from every energy source applied towards humanity's endeavors across every single industrial and technological sector, across every country. It does not include energy from food, and the extent to which direct biomass burning has been accounted for is poorly documented. Being the power source metric of civilization, world energy consumption has deep implications for humanity's socio-economic-political sphere.

Institutions such as the International Energy Agency (IEA), the U.S. Energy Information Administration (EIA), and the European Environment Agency (EEA) record and publish energy data periodically. Improved data and understanding of world energy consumption may reveal systemic trends and patterns, which could help frame current energy issues and encourage movement towards collectively useful solutions.

The global primary energy consumption at the end of 2003 was equivalent to 9741 million tonnes of oil equivalent (Mtoe). The primary energy consumption for few of the developed and developing countries are shown in Table 1.1. It may be seen that India's absolute primary energy consumption is only 1/29th of the world, 1/7th of USA, 1/1.6th time of Japan but 1.1, 1.3, 1.5 times that of Canada, France and U.K respectively.

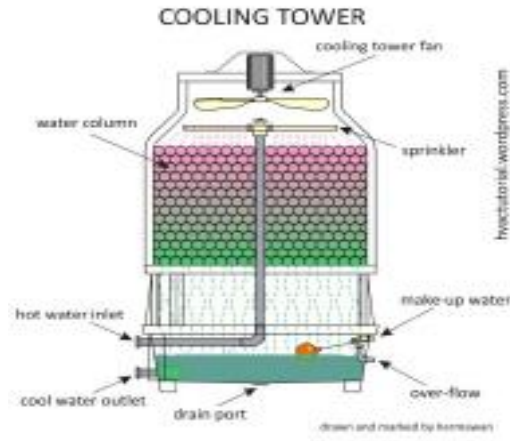
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TABLE 1.1 PRIMARY ENERGY CONSUMPTION BY FUEL, 2003						
In Million tonnes oil equivalent						
Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electric	Total
USA	914.3	566.8	573.9	181.9	60.9	2297.8
Canada	96.4	78.7	31.0	16.8	68.6	291.4
France	94.2	39.4	12.4	99.8	14.8	260.6
Russian Federation	124.7	365.2	111.3	34.0	35.6	670.8
United Kingdom	76.8	85.7	39.1	20.1	1.3	223.2
China	275.2	29.5	799.7	9.8	64.0	1178.3
India	113.3	27.1	185.3	4.1	15.6	345.3
Japan	248.7	68.9	112.2	52.2	22.8	504.8
Malaysia	23.9	25.6	3.2	-	1.7	54.4
Pakistan	17.0	19.0	2.7	0.4	5.6	44.8
Singapore	34.1	4.8	-	-	-	38.9
TOTAL WORLD	3636.6	2331.9	2578.4	598.8	595.4	9741.1

Cooling Tower

In order to improve the efficiency of the plant, the steam exhausted from the turbine is condensed by means of a condenser. Water is drawn from a natural source of supply such as a river, canal or lake and is circulated through the condenser. The circulating water takes up the heat of the exhausted steam and it becomes hot. This hot water coming out from the condenser is discharged at a suitable location down the river. In case the availability of water from the source of supply is not assured throughout the year, cooling towers are used. During the scarcity of water in the river, hot water from the condenser is passed on to the cooling towers where it is cooled. The cold water from the cooling tower is reused in the condenser.



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Department Mechanical Engineering

PPT- Subject- Energy Engineering, B.E,

INTRODUCTION

- An electrical grid is an interconnected network for delivering electricity from suppliers to consumers. It consists of three main components;
- 1) power station that produce electricity from combustible fuels or non-combustible fuels;
- 2) transmission lines that carry electricity from power plants to demand centers; and 3) transformers that reduce voltage so distribution lines carry power for final delivery.

Prof. P. E. Lokhande

NPTEL Video lecture : <https://nptel.ac.in/courses/112/106/112106135/>

Mechanical Engineering - Introduction to Finite Element Method



NPTEL provides E-learning through online Web and Video courses various streams.

NPTEL - npthrd - 23-Dec-2013

nptel.ac.in › courses

Variational Methods to Computer Programming - NPTEL



Intro Video · Module 1 : Variational Calculus and Minimization
Problem · Module 2 : One Dimensional **Finite** ...

NPTEL - NPTEL IIT Guwahati · 15-May-2020

- 6. Practice of University Question Paper

**Time: 10.30 am -1.00 pm]
Day: Wednesday]**

**[Marks: 70Marks
[Date: 25/11/2020**

Instructions to Candidates

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn wherever necessary*
- 3) *Figures to the right indicate full marks*
- 4) *Use of Electronic pocket calculator is allowed.*
- 5) *Assume suitable data, if necessary.*

		Attempt Any ONE From Q.1 and Q. 2.	Marks	CO	PO	BL
Q.1	a.	Draw the ISO symbols for following Hydraulic elements. i. Spring loaded accumulator ii. Sequence valve.	02	1	1	3
	b.	What do you mean by cushioning of cylinder? Explain with suitable diagram.	04	2	2	3
	c.	How control valves are classified? Explain pressure reducing valve along with neat sketch and symbol.	04	1	2	2
O R						
Q.2	a.	Differentiate between hydraulic accumulator and hydraulic intensifier.	02	1	1	1
	b.	A gear pump has an outside diameter of 82.6 mm, inside diameter of 57.2 mm and width of 25.4 mm. If the actual pump flow rate at 1800 RPM and at the rated pressure is 0.00183m ³ /s, What is the volumetric efficiency?	04	2	2	2
		How flow control valve works? Explain with neat sketch.	04	1	2	4
Attempt Any ONE from Q.3 and Q.4						
Q.3	a.	State various efficiencies of hydraulic pumps with their formulae.	02	1	1	1
	b.	What size of accumulator is necessary to supply 10000 cm ³ of oil in a hydraulic system of minimum pressure of 200 bar to 100 bar minimum. Assuming N ₂ gas with pre charged pressure of 80 bar find adiabatic & isothermal condition.	04	2	3	1
	c.	With neat sketch explain proportional valve.	04	1	2	3
O R						
Q.4	a.	The displacement of a pump operating at 1000 rpm at a pressure of 10 bar is 100 cm ³ , the input torque from the prime mover is 120 Nm. If it delivers 0.0015 m ³ /s of oil, determine, i. Overall efficiency of pump, ii. theoretical torque required to operate through pump, iii. Volumetric efficiency.	03	2	1	2

Q2.b) Advantages of Fluid Power System :-

- 1) Fluid power system avoids mechanical linkage such as belt, pulley, chains to a greater extent.
- 2) Hence Breakdown are reduced and production will increase.
- 3) "Design and Construction" of fluid power system is easy, simple and compact.
- 4) Automatic and safety circuits are possible, which is very important to increase rate of production and safety to avoid accidents.
- 5) Maintenance, servicing, lubrication etc. are simple.

Limitations :-

- 1) Leakage of oil causes dirty surroundings, slippery floor, increased chances of accidents.
- 2) Hydraulic oils are petroleum based oils hence there are chances of fire hazard.
- 3) Hydraulic system are slower in operation: slow speed may be a disadvantage if higher rate of work is needed.

- Assignment



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Department of Mechanical Engineering

ASIGNMENTS QUESTIONS

UNIT – I : Fundamentals of Fluid Mechanics

1. State and prove Pascal's law.
2. A Newtonian liquid of kinematic viscosity 3 stokes flows over a flat horizontal plate of surface area 0.8 m^2 . Velocity at y meters from plate is given as $u = 2y - 2y^3$ in m/s. If shear force on plate is 0.352 N, find the density of liquid.
3. What is the fluid? What are different types of fluid? Explain.
4. State and Explain the Newton's law of viscosity?
5. A shaft of 150 mm diameter moves in a sleeve of length 300 mm at a speed of 0.5 m/s under the applications of 200 N force in the directions of its motions. If the clearance between the shaft and sleeves is 0.08 mm, Calculate in viscosity of the lubricating oil in the gap if the applied force is increased to 1000 N, what will be the speed of the sleeve?
6. What is surface tension? Derive equation of intensity of pressure for 1) Droplet 2) Bubble 3) Liquid jet
7. Derive an expression for total pressure and center of pressure for and inclined plane surface, immersed in static mass of a liquid.
8. Explain with neat sketches, the condition of equilibrium for floating and submerged bodies.
9. A wooden block 60cm long, 25cm wide and 20cm deep has its shorter axis vertical with the depth of immersion 10cm. Calculate the position of the metacentre and comment on the stability of the block.

- Theory Question Bank

Unit 1: Introduction and Thermal Power Plant

1. Explain the factors considered for site the selection of a power station
2. Discuss the status of power generation by the nonconventional sources in India. What is the role of government in this sector?
3. Explain present status of power generation in India and Maharashtra. Comment on impact of power generation on economic development of nation.
4. How cogeneration is achieved using back pressure turbines and pass out turbines?
5. In a thermal power plant steam is condensed in a surface condenser at 14000 kg/hr and the leakage is 6 kg/hr. The vacuum near the suction pump is 69 cm of Hg and the temperature is 35°C. The

air and the condensate are removed by a wet air pump. Find the capacity and the dimensions of the pump if $N = 120$ rpm, L/D is 1.2 and the pump is single acting. Take barometric pressure as 760mm of Hg.

6. In a cogeneration plant steam is generated at 50 bar and 500°C and expanded through an isentropic turbine to a condenser pressure of 0.05 bar. The heating load is supplied by extracting steam from turbine at 3 bar which is condensed in a process heater to saturated liquid at 3 bar and then pumped back to boiler. The power load on the system is 6 MW and the heating load is 1.2 MW. Show the process on T-s diagram and find
 - i) steam generation capacity of boiler in TPH
 - ii) heat transfer to water in the boiler in kW
 - iii) rate of cooling water flow across the condenser if the temperature rise of the water is 5°C . Neglect the pump work.
7. Discuss various factors considered for site selection of 'Thermal Power Plant
8. What do you understand by fluidized bed combustion (FBC)? Explain its working principle with neat sketch
9. The steam at 70 bar and 500°C is supplied to a steam turbine. Steam is expanded in high pressure turbine isentropically till it is dry saturated. The steam is reheated to 400°C in reheater. Expansion after reheating is carried to condenser pressure up to 0.2 bar. Find efficiency of cycle and work output if flow of steam is 10 Kg/sec. Consider pump work. Represent cycle on T-S and h-S plot and sketch flow diagram. Find Reheating pressure.
 - i) Dryness fraction of steam at low pressure turbine outlet.
 - ii) Thermal efficiency of cycle
 - iii) Work ratio
10. Draw Ideal reheating process on T-s and h-s diagram. Show change in work done during reheating. State advantages of reheating

• ORAL QUESTION BANK

Unit 1: Introduction and Thermal Power Plant

1. What is the thermal efficiency of a steam power station?
2. What is the the range of Rankine cycle efficiency in a good steam power station?
3. What is mean by bottoming cycle
4. The height of chimney in a steam power plant is governed by what?
5. What are the major heat loss in a steam power station?
6. How is regenerative cycle feed water is heated?
7. What is the value of reheat factor ?
8. What is mean by Reheat cycle?
9. What is mean by Topping cycle?
10. what is mean by AHP, CHP, ESP



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Department Mechanical Engineering

• Seminar Project Guidance

SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA					
DEPARTMENT OF MECHANICAL ENGINEERING					
Sr. No.	Name of Staff	PROJECT GROUPS			Students
1	PROF. S.M. GAIKWAD	B8	F9		8
2	DR. M.M. TAYDE	B6	C10	F3	12
3	PROF. M.A. MOHITE	D12	B-15	F01	12
3	PROF. P.D. KULKARNI	D7	D8		8
4	PROF. L.P. PURANIK	F15	D10		8
5	PROF. N.V. LAKAL	C11	F12		8
6	PROF. S.R. MESHRAM	D11	A14		8
7	PROF. Ms. S. R. JAWALE	A7	B14		8
8	PROF. N.S. HIRULKAR	B1	F16		7
9	PROF. S.S. MATHAPATI	E8	A13		8
10	PROF. S. V. WANKHEDE	C12	B11		8
12	PROF. P.E. LOKHANDE	A3	C6		8
13	PROF. M.N. CHOUGULE	A4			4
14	PROF. Ms. P. P. JAWALE	B7			4
16	PROF. S.G. DABADE	E4	F5		8
17	PROF. S.V. CHAVAN	C2	F14		8
18	PROF. V.M. UGARE	A12,B12	C14	B16	16
19	PROF. A.R. NARODE	D13	E15		8
20	PROF. S.V. KARANKOTI	A1	A2	E1	12
21	PROF. R.S. PATIL	A9			4
22	PROF. P. R. GHARDE	D5	F11		8
24	PROF. A.P. OGALE	A11			4
25	PROF. B.R. CHAUDHARI	D6	D9		8
26	PROF. Ms. S.B. SALUNKHE		D1	D4	8
27	PROF. V.V. GAIKWAD	B13	A6		8
28	PROF. N.A. SHINDE	D14			4
29	PROF. S.N. LOKHANDE		E11	A15	11
30	PROF. S.B. BHOYAR	F8			3
31	PROF. S.G. PANDIT	A5	A16		8
32	PROF. S.A. AWAGHADE	B10			4
34	PROF. P.M. LINGE	A8	B9	A-17	11
35	PROF. A.J. KATE	E2	E13		8
36	PROF. S.V. CHAVAN		C5		4
37	PROF. S.D. CHAVAN	D2	D3		8
38	PROF. A. A. JAMDAR		C15	E12	8
39	PROF. S. S. DEVARSHI	E10	F4		8
40	PROF. A.A. JOSHI	C1	E3		8
42	PROF. N. G. JAWARKAR	E9			4
43	PROF. S. S. SHINDE	C8	E6		7
44	PROF. M. B. KUMBHAR	E5			4
45	PROF. Ms. Y. M. RAUT	C4	C7	E-13	12
47	PROF. SURAJ. B. PATIL	C3	F7		8
48	PROF. SHITAL. B. PATIL	B4	E7		8
49	PROF. R. R. CHAVAN	B2	B5		8
50	PROF. P. D. DABHADE	C13	F14		4
51	PROF. D. S. GHODAKE	C9	F10		8
52	PROF. T.S. JAGTAP	B3	D15		8
53	PROF. S.J. PATIL		A-10		4
	NIMALKAR	F2	F6		8
					371

Project Coordinator
V.M.UGARE



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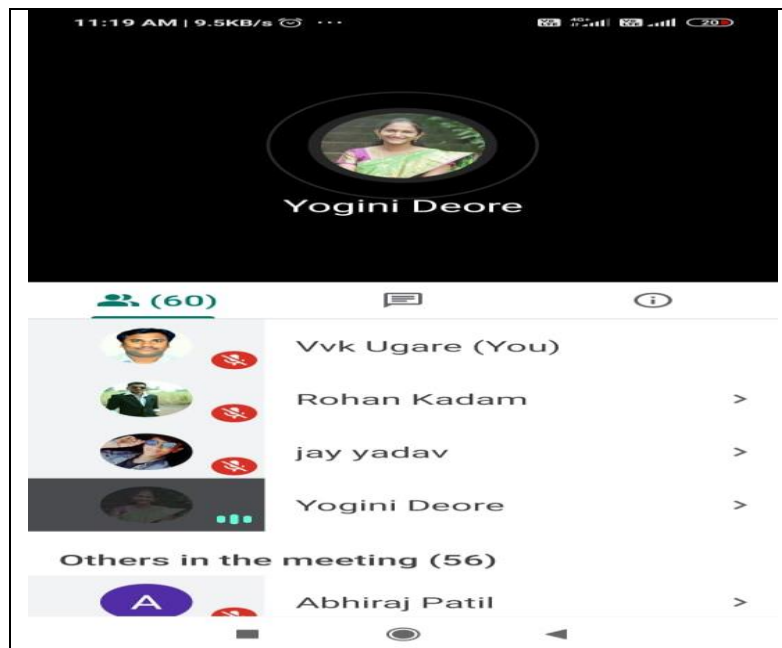
Department Mechanical Engineering

- Meeting for project guidance to students by Project coordinators

Department of Mechanical Engineering Activities conducted report

Date	Time	Descriptions	Name of Coordinator	Speaker Name
10/ 07/2020	11.00 AM to 1.00 PM	PROJECT MEETING	Prof.V.M Ugare Prof. Y. M. Raut	Prof.V.M Ugare Prof. Y. M. Raut
15/07/2020	11.00 AM to 1.00 PM	Opportunities in the field of Materials for BE projects	Prof.V.M Ugare Prof. Y. M. Raut	Prof. P.E Lokhande
15/07/2020	11.00 AM to 1.00 PM	Opportunities and scope in the field of Design for BE projects	Prof.V.M Ugare	Prof. M.A Mohite
24/07/2020	11.00 AM to 1.00 PM	Opportunities and scope in Automobile sector for BE Students	Prof.V.M Ugare Prof. Y. M. Raut	Prof. P.R.Gharde
24/07/2020	11.00 AM to 1.00 PM	Opportunities and scope in Thermal and design for BE Students	Prof.V.M Ugare Prof. Y. M. Raut	Prof.V.M Ugare Prof. Y. M. Raut

Online project meeting during pandemic



- Remedial Classes



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Lonavala, Pune, 410401, Website : www.sinhgad.edu
Department of Engineering Sciences

Date: 11/11/2020

Notice

Remedial Sessions for Fail Students

All Students failed in A.Y. 2019-20 (Sem-I & Sem-II) are hereby informed that SPPU, Pune has issued a circular regarding backlog and class improvement examination starting from 3rd December, 2020.

In view of the above mentioned subject, the remedial sessions for the fail students will be conducted by the subject teachers for those who are appearing for backlog/class improvement examination.

All such fail students are advised to attend the remedial sessions and get benefited. All sessions will be conducted through online mode using Google meet app. Link for the sessions will be circulated on student's WhatsApp groups.

Please follow the schedule for remedial sessions given below:

Sr. No.	Date & Day	Subject	Timing	Subject	Timing
1	20/11/2020, Friday	Engg. Physics	10 AM -12.PM	Engg. Chemistry	3 PM - 5 PM
2	21/11/2020, Saturday	Engg. M-I	10 AM -12.PM	Engg. M-II	3 PM - 5 PM
3	23/11/2020, Monday	BEE	10 AM -12.PM	BXE	3 PM - 5 PM
4	24/11/2020, Tuesday	SME	10 AM -12.PM	EG	3 PM - 5 PM
5	25/11/2020, Wednesday	PPS	10 AM -12.PM	Mechanics	3 PM - 5 PM
6	26/11/2020, Thursday	Engg. Chemistry	10 AM -12.PM	Engg. Physics	3 PM - 5 PM
7	27/11/2020, Friday	Engg. M-II	10 AM -12.PM	Engg. M-I	3 PM - 5 PM
8	28/11/2020, Saturday	BXE	10 AM -12.PM	BEE	3 PM - 5 PM
9	30/11/2020, Monday	EG	10 AM -12.PM	SME	3 PM - 5 PM
10	01/12/2020, Tuesday	Mechanics	10 AM -12.PM	PPS	3 PM - 5 PM




HEAD

Department of Engineering Sciences (F.E.)
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Department of Engineering Sciences

- Makeup Classes/Extra Lectures

Attendance Record SEM-II, A. Y. 20-21

Sr. No/ Date/ Roll No	Name of faculty: Mrs. B.M. Tayde																	Name of Subject :- Engineering Chemistry																	Pract
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-01	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-02	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-03	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-04	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-05	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-06	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-07	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-08	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-09	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-13																																			
A-14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
A-28																																			

- Counselling – special hints and techniques (TG Scheme)

		SINHGAD INSTITUTE OF TECHNOLOGY, LONAVALA Department of Engineering Sciences (F. E. 2020-21 SEM-II)	
		LG Meeting Record (online) Div. B	
Date:-18/05/2021		Batch B3 (B41 to B57)	
Time:- 3:45 to 4:30 PM			
Sr. No.	Points of discussion	Remark	
1	Practical conduction on Virtual Lab/ faculty recorded practical	During Lab session practicals will be conducted on Virtual Lab and some faculty recorded practicals will be shared with students	
2	Insem Examination pattern & syllabus	Insem exam will be on two units and Multiple choice questions of one marks. Exam will be conducted on Microsoft Team with Audio, Video recording.	
3	Importance of Attendance	Students should attend lectures regularly. Prior permission should be taken before remain absent	
4	Timely Submission of assignments and lab manual	Assignments will be given after completion of unit and student have to submit it timely	
5	Practice Test on each Unit	Practice test will be conducted on each unit after completion of unit. Pattern of paper will be similar to university paper pattern	
Student Attendance Record			
Meeting Summary			
Total Number of Participants		15	
Meeting Title		LG MEET	
Meeting Start Time		5/18/2021, 3:40:02 PM	
Meeting End Time		5/18/2021, 4:25:43 PM	
Full Name		Join Time	
Dr.Mrunal Joshi		5/18/2021, 3:44:06 PM	
B-41 PAWAROMKAR PAWAROMKAR		5/18/2021, 3:49:25 PM	
B-42 ATHARV PHULWADE		5/18/2021, 3:56:06 PM	
B-43 SHREYASH RAMTEKE		5/18/2021, 3:48:30 PM	
B-44 SWARUPA RAVAS		5/18/2021, 3:49:01 PM	
B-45 ROHIT KUMAR		5/18/2021, 3:47:37 PM	
B-47 ANIKET SANDBHOR		5/18/2021, 3:45:33 PM	
B-49 SOHEL SHAIKH		5/18/2021, 3:57:19 PM	
B-50 SHANTANU SHARNAGAT		5/18/2021, 3:51:59 PM	
B-51 DHIRAJ SHINDE		5/18/2021, 4:02:11 PM	
B-53SanaSunni		5/18/2021, 3:48:52 PM	
B-54 ALISHA TAMBOLI		5/18/2021, 3:58:49 PM	
B-55 SHUBHAM VAIDYA		5/18/2021, 3:48:47 PM	
B-56 APURV WARJURKAR		5/18/2021, 4:03:53 PM	
B-57 RHUTVIK TELI		5/18/2021, 3:52:52 PM	
			
			
		HEAD Department of Engineering Sciences (F.E.) Sinhgad Institute of Technology, Lonavala	

- Question Bank

Engineering Chemistry Question Bank

Unit-01: Water Technology

Questions: 3Marks

1. Explain the difference between temporary hardness and permanent hardness.
Why temporary hardness is known as alkaline hardness?
2. Define caustic embrittlement. Give causes and prevention of caustic embrittlement.
3. Explain Reverse osmosis as membrane technique used in purification of water.
4. Which type of alkalinity exists in nature? Why hydroxide alkalinity and bicarbonate alkalinity does not exist together?
5. Define hardness of water? State temporary and permanent hardness causing impurities. What is basic difference between them?
6. What is meant by hardness? What are the causes of hardness? Define alkaline and non-alkaline hardness of water.
7. What is principle of EDTA method to determine hardness in water? Explain reactions involved in complex metric titration of hard water with EDTA solution.
8. Differentiate scale and sludge.
9. Distinguish between alkaline and non-alkaline hardness of water.

Questions: 4Marks

1. Distinguish between scale and sludge.
2. Give reason:
A] Hydrazine is preferred over sodium sulphide to remove dissolved oxygen from Boiler feed water.
B] If carbonate alkalinity is present in water, both phenolphthalein and methyl orange indicators are required.
3. Give reason:
a) In EDTA method alkaline buffer is used.
b) Zeolite process cannot be used for water sample containing Fe & Mn salts.
4. Explain the principle and process of electro dialysis.
5. Define caustic embrittlement. Give cause and prevention of caustic embrittlement in boiler.
6. What is desalination of sea water? Explain reverse osmosis for the purification saline water.
7. What is electro -dialysis? Explain electro-dialysis with diagram for the desalination of sea water.

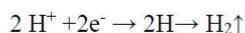
- Special notes

F. E.

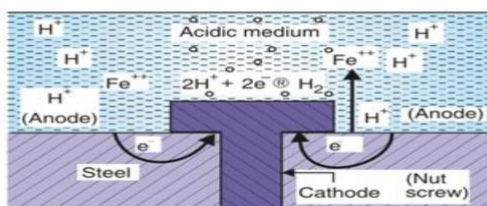
Sinhgad Institute of Technology, Lonavala

Engineering Chemistry

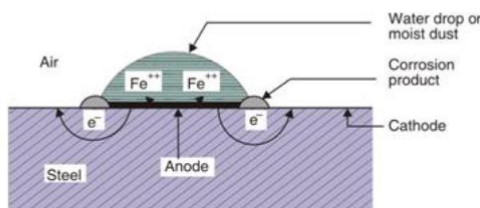
If the corroding medium is acidic then H^+ ions from the medium capture electrons from cathode and there is liberation of the H_2 gas by following equation.



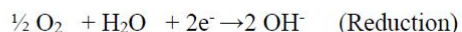
Net reaction- $Fe + 2 H^+ \rightarrow Fe^{++} + H_2 \uparrow$



Oxygen gas absorption: In neutral or slightly alkaline medium with dissolved oxygen of corroding medium, the reaction of oxygen absorption takes place at cathode.

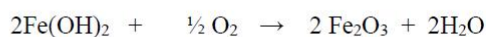


At the anodic areas of the metal (iron) get oxidizes as



Net reaction- $2Fe + 2H_2O + O_2 \rightarrow 2Fe(OH)_2 \downarrow$

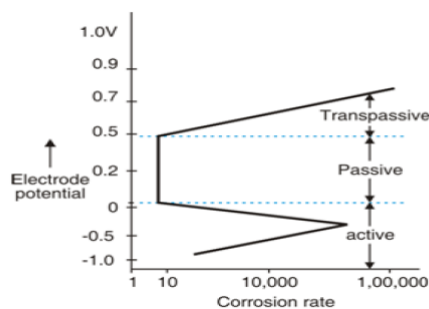
If enough oxygen is present in medium, then the ferrous hydroxide gets oxidized further to brown rust.



Thus metal hydroxide or rust formation takes place as a corrosion product. If this metal hydroxide is soluble in solvent, it remains dissolved and if not soluble then remains deposited on cathode.

Anodic protection Method

Some metals have wide passivity range and some have it narrow. To study this a graph of potential applied on metal vs relative corrosion rate need to understand.

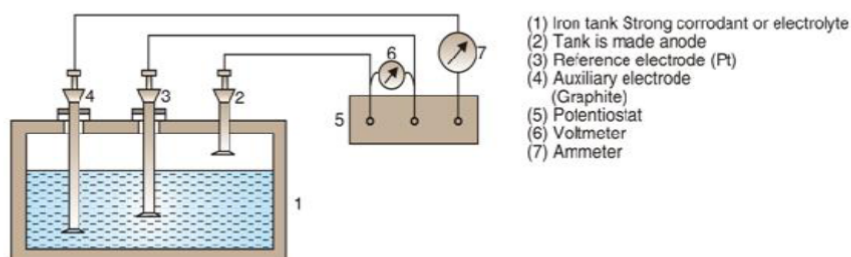


- i) Metals like iron, steel, stainless steel, aluminium, chromium etc. show passivity when a certain range of potential is applied on them.
- ii) Every metal and alloy has a characteristic passivity range voltage but all the metals do not have the wide range enough to employ the anodic protection for corrosion control.
- iii) The metal becomes nonreactive or corrosion resistant when the voltage applied on metal corresponds to passivity range.

Principle: The metal to be protected is forced to behave as anode.

Construction and working :

- (i) The metallic installation (reactor, water tank, industrial water coolers, industrial condensers, etc.) is made anodic by use of reference electrode and auxiliary electrode, as shown in Fig. 6.14.
- (ii) There is a potentiostat for applying the desired voltage and an ammeter to watch the corrosion current. The minimum or negligible current indicates that anodic protection is taking place successfully.



- Assignments and solving University question papers

Sample of Assignment

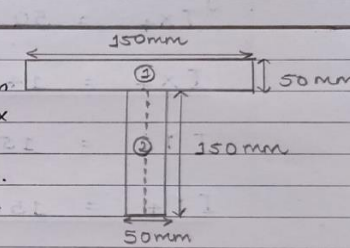
Sinhgad Institute of Technology, Lonavala		
Name of Student:	Class (Div): F.E. [A]	Roll No.
Subject: Engineering Chemistry	Date:	
Assignment No.1 [Water Technology]		
1	Explain the EDTA method for the determination of Hardness of water sample.	6M
2	What is electro -dialysis? Explain electro-dialysis with diagram for the desalination of sea water.	3M
3	What is alkalinity of water? State the types of alkalinities. How alkalinity in a water sample is determined. Dec. 2008, May 2010, Dec. 2011, Dec. 2012.	6M
4	What are the causes, preventions & disadvantages of scale and sludge formation in the boilers? (Dec. 2004, May 2006 Dec 2007, May 2010, June 2011, Dec 2013)Dec 2014	6M
5	Explain boiler corrosion and caustic embrittlement as ill effects of using hard water in boilers. State their causes and preventive measures. May 2006, May 2013, May 2014.	6M
6	What is meant by softening of water? Explain the zeolite / permutit method of water softening. May 2004, Dec. 2007, May 2010May 2015 , Dec 2016, May 2017	6M
7	Describe demineralization/ Ion Exchange process of softening of hard water. What are its advantages over zeolite method? Dec. 2003, May. 2007, May 2014. Dec 2015 May 2016	6M
8	What is desalination of sea water? Explain reverse osmosis for the purification saline water.	3M

Submission Record of Assignment

Assignment No: 02

Unit - 2 : Distributed Forces and Friction

Q.1. Find the moment of inertia of a T-section with flange as 150 mm x 50 mm and web as 150 mm x 50 mm about X-X axis and Y-Y axis through the centre of gravity of the section.



Solⁿ :

Component NO - 1 ::

Area A = 150 x 50 = 7500 mm²

y (mm) = 175

$I_{X_1} = \frac{150 \times 50^3}{12}$

$I_{X_1} = 1562500 \text{ mm}^4$

$I_{Y_1} = \frac{50 \times 150^3}{12}$

$I_{Y_1} = 14062500 \text{ mm}^4$

$y - \bar{Y} = 50$

Q.2. A slender rod is welded into the shape as shown in fig. locate the position of centroid of the rod with respect to origin 'O'. if $AO = BO = CO = 50 \text{ mm}$.

Solⁿ :

The y - axis is the axis of symmetry.

$\therefore \bar{x} = 0$

The Centroids of AO, BO & CO are marked as shown in fig.

$$\bar{Y} = \frac{l_1 Y_1 + l_2 Y_2 + l_3 Y_3}{l_1 + l_2 + l_3}$$

$l_1 = l_2 = l_3 = 50 \text{ mm}$, $Y_1 = Y_2 = 25 \sin 45^\circ$
 $Y_3 = -25 \text{ mm}$

$$\bar{Y} = \frac{50 \times 25 \sin 45^\circ + 50 \times 25 \sin 45^\circ + 50 \times (-25)}{50 + 50 + 50}$$

$$\bar{Y} = 3.45 \text{ mm}$$

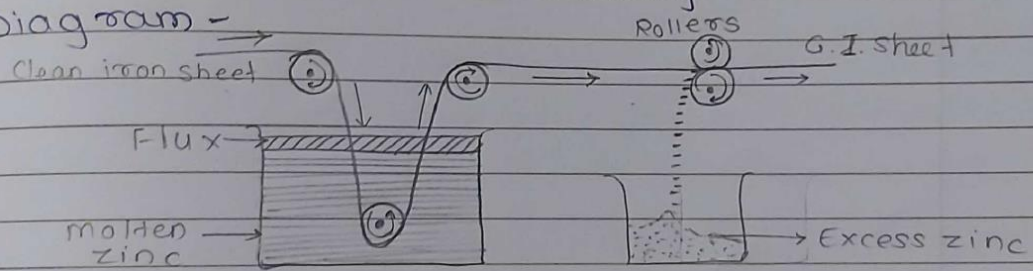
- Sample of solved Question bank by students

Q.5. How steel is galvanized? Explain the process with the help of diagram.

→ Galvanizing - Coating of zinc on iron or steel, is called as galvanizing.

Process - The article is cleaned well with dil. H_2SO_4 , washed with water and then dried. Then it is dipped in the molten bath of zinc maintained at $425-450^\circ$. Surface of the bath is covered with the flux like NH_4Cl . After taking it out, the article is rolled to make coating of uniform thickness and to remove any excess of zinc. Then it is cooled slowly.

Diagram -



Applications - G.I. sheets used for wires, pipes, buckets, screws, G.I. sheets is commonly used for roofing of industrial sheds.

where pK_a and pK_b are the negative log of the dissociation constants weak acid K_a and weak base K_b

- Buffer solution are two types .

a) acidic buffer - weak acid and salt of weak acid

b) Basic buffer - weak base and salt of weak base

24 Explain conductometric titration curve for reaction between weak acid of strong base

→ Reaction :



Titration curve

1) In the beginning conductance of acetic acid is low and increase slowly due to formation of completely dissociated salt formation up to equivalent point.

2) After that the conductance increases more rapidly due to net addition of Na^+ and OH^- from burette. Conductance of equivalent point is completely due to sodium acetate.

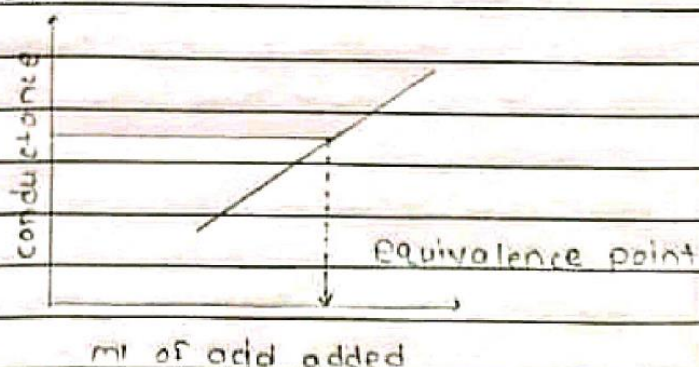
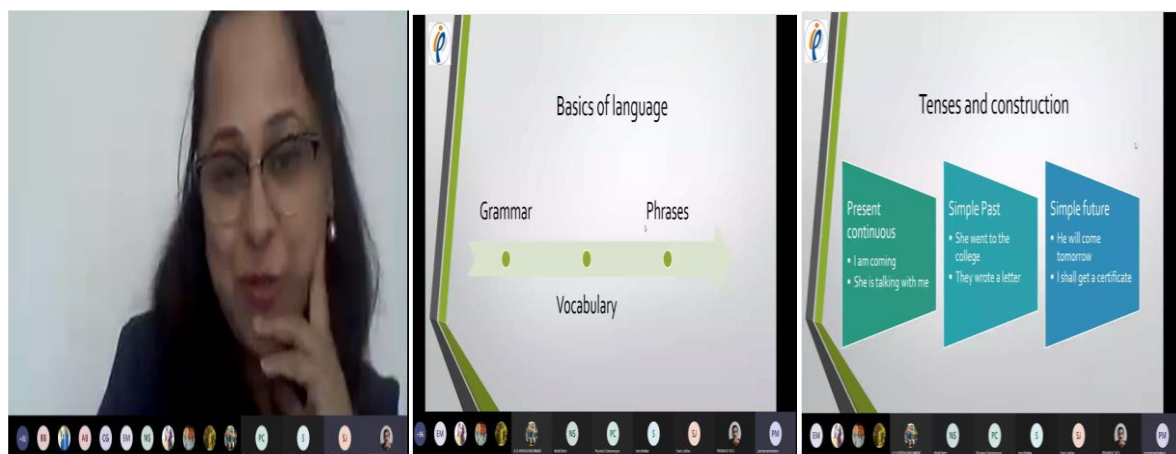


Fig. Weak acid strong base titration

- Guest Lectures For Students



Dr. Ranjeet Salave addressing the FE students on Covid-19 Vaccine Myths and Facts



Lecture on Basics of English Communication for FE students by Prof. Prachee Mahambare, NLP Practitioner and a certified Corporate Trainer.

Introduction

In the previous session, we saw that **our basic aspirations are happiness(सुख) and prosperity(समृद्धि).**
The home assignment was to check if this is true for you.
We also asked you to write down your perspective about happiness and about prosperity..

In this session we want to explore into two questions:

- Are happiness and prosperity our basic aspirations?
- What is needed to fulfil these aspirations(चाहना)?

Through this exploration, we will also see what this UHV-I course is about. It will help to answer questions like:

- What is the content of UHV?
- What is the process of UHV?
- Why are we doing this course (UHV-I)?
- Will it really help me in fulfilling my aspirations?
- Will it really help me in addressing to my concerns?

From the previous session: Human Goal = Happiness & Prosperity

- Our basic aspiration (human goal) is very clear – the destination is fixed
- We know our current state (right evaluation)
- We plan steps that connect and lead to the fulfillment of basic aspiration – direction is definite

(1)-Basic Aspiration
(निरंतर सुख)

Fulfilling life

To BE always happy and prosperous

(2)-Current State
(कभी खुशी, कभी गम)

(3)-Direction of effort →

Our basic aspiration is definite
It does not keep changing
(It seems to be the same for all human beings)

Glimpses of Session on Universal Human Values by Dr. Soojay Deshpande

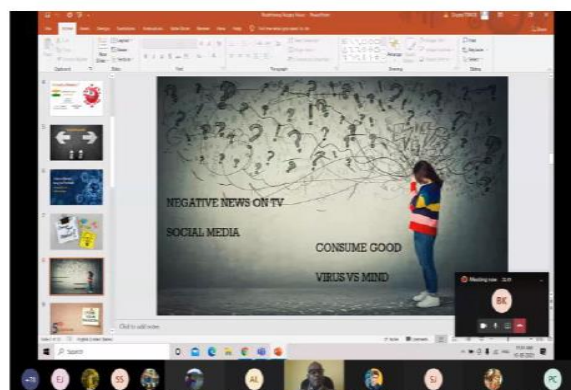
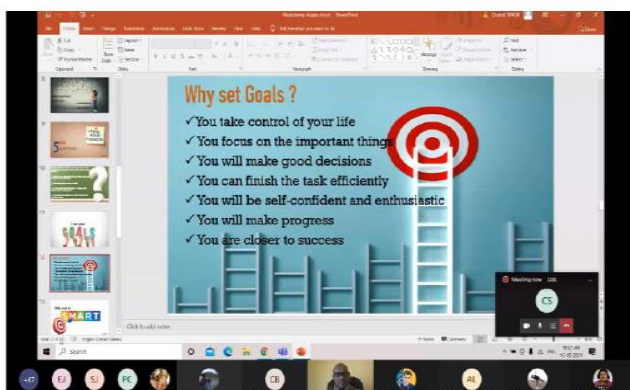
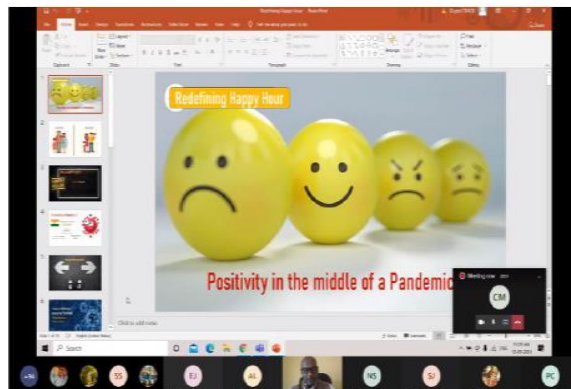


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Gat No. 309/310, Kusgaon (Bk), off Mumbai –Pune, Expressway. Lonavala, Pune, 410401,
website : sit.sinhgad.edu

Department of Engineering Sciences



Glimpses of Motivational Lecture by Mr. Atish Ramesh Bhore (life and mind coach)

- Project Exhibition under PBL



Sinhgad Institutes

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Expressway, Lonavala, Pune, 410401, Website: www.sinhgad.edu
Department of Engineering Sciences

Date-01/07/2021

To,

Dr. M. S. Chaudhary,
SIT Lonavala.

Subject: Invitation as Chief-guest for In-house PBL Project Exhibition in Engineering Sciences Dept., SIT Lonavala, Pune.

Respected Sir,

We are pleased to inform you that FE dept., Sinhgad Institute of Technology Lonavala organizing In-house **Project Based Learning Project Exhibition/Presentation** of FE students only on **3rd - 4th July 2021**.

We cordially invite you for Inauguration function at **9:00 am on 3rd July 2021** for the above mention program.

Detail schedule of program is attached for your information.

Thanking you.

Prof. F. S. Ghodichor
PBL In-charge



Dr. P. S. Patil

HEAD Dept.

Department of Engineering Sciences (F.E.)
Sinhgad Institute of Technology, Lonavala

Date: 23/06/2021

Schedule of PBL Project Exhibition

PBL Phase-I Project Presentation

Day & Date	Div.	Time
Saturday, 03/07/2021	Inauguration	9:00 am to 9:15 am
	A	9.15 am to 11.00 am
	B	11.00 am to 1.00 pm
	C	2.00 pm to 4.00 pm
Sunday, 04/07/2021	D	9.00 am to 11.00 am
	E	11.00 am to 1.00 pm

Mode of Conduction: - Microsoft teams (online) Link will be on student's whatsapp groups.

All PBL mentors are requested to call your PBL batch students as per displayed schedule for presentation.

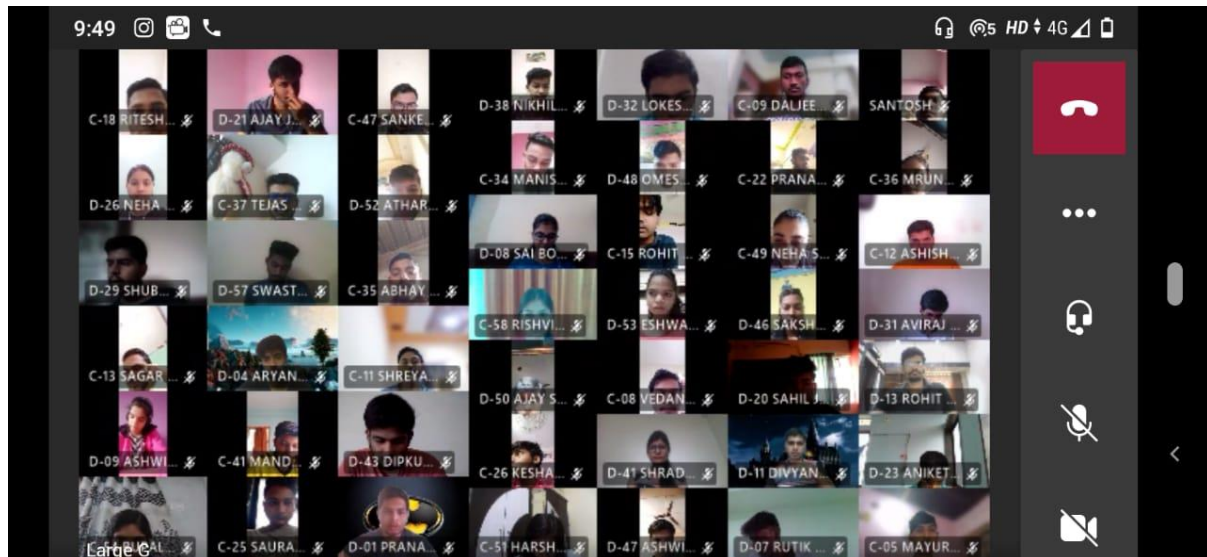



HEAD
Department of Engineering Sciences (F.E.)
Sinhgad Institute of Technology, Lonavala

• Project Exhibition Attendance

A-27 SHANTANU KHONDE	Joined before	7/4/2021, 10:57:46 AM	A-14 UTKARSH GAIKWAD	User Actor	Timestamp
A-32 DEVASHISH LAHARIYA	Joined before	7/4/2021, 10:57:46 AM	A-14 UTKARSH GAIKWAD	Left	7/3/2021, 10:42:21 AM
A-41 PRUTHVIRAJ PAWAR	Joined before	7/4/2021, 10:57:46 AM	A-16 LOKESH GHODKE	Joined	7/3/2021, 10:22:43 AM
A-50 SHANTANU NAIK	Joined before	7/4/2021, 10:57:46 AM	A-20 PRATIKSHA JADHAV	Joined	7/3/2021, 10:42:11 AM
A-7 SANJANA BOHORA	Joined before	7/4/2021, 10:57:46 AM	A-20 PRATIKSHA JADHAV	Left	7/3/2021, 10:42:21 AM
B-1 AASTHA SINGH	Joined before	7/4/2021, 10:57:46 AM	A-25 CHAITANYA KATORE	Joined	7/3/2021, 9:55:49 AM
B-11 MAHESH DHORKULE	Joined before	7/4/2021, 10:57:46 AM	A-32 DEVASHISH LAHARIYA	Joined	7/3/2021, 9:57:37 AM
B-11 MAHESH DHORKULE	Left	7/4/2021, 10:58:04 AM	A-34 SHARDUL MAHAJAN	Joined	7/3/2021, 9:59:53 AM
B-22 PARAS PARAS	Joined before	7/4/2021, 10:57:46 AM	A-41 PRUTHVIRAJ PAWAR	Joined bef	7/3/2021, 10:22:43 AM
B-34 YASH MALVADE	Joined before	7/4/2021, 10:57:46 AM	A-41 PRUTHVIRAJ PAWAR	Left	7/3/2021, 10:42:21 AM
B-47 ANIKET SANDBHOR	Joined before	7/4/2021, 10:57:46 AM	A-43 SWAPNIL RANDIVE	Joined bef	7/3/2021, 10:22:43 AM
Bhavana Tayde (Guest)	Joined before	7/4/2021, 10:57:46 AM	A-43 SWAPNIL RANDIVE	Left	7/3/2021, 10:27:20 AM
C-01 ADITYA KUMAR	Joined before	7/4/2021, 10:57:46 AM	A-51 ARYAN SHINGAN	Joined bef	7/3/2021, 10:22:43 AM
C-05 MAYUR BAKAL	Joined before	7/4/2021, 10:57:46 AM	A52ShreyaSuryawanshi	Joined bef	7/3/2021, 10:22:43 AM
C-06 CHETAN BARGAL	Joined before	7/4/2021, 10:57:46 AM	A52ShreyaSuryawanshi	Left	7/3/2021, 10:25:22 AM
C-07 ROHINI BHORDE	Joined before	7/4/2021, 10:57:46 AM	A-55 APURVA WAGHMARE	Joined bef	7/3/2021, 10:22:43 AM
C-10 DARAPPA BADOLE	Joined before	7/4/2021, 10:57:46 AM	B-1 AASTHA SINGH	Joined	7/3/2021, 10:24:39 AM
C-18 RITESH HARISHCHANDR	Joined before	7/4/2021, 10:57:46 AM	B-14 VIKRANT GAIKWAD	Joined bef	7/3/2021, 10:22:43 AM
C-21 SUSHILKUMAR JAGDHA	Joined before	7/4/2021, 10:57:46 AM	B-14 VIKRANT GAIKWAD	Left	7/3/2021, 10:42:21 AM
C-24 RUTWIK KAMTHE	Joined before	7/4/2021, 10:57:46 AM	B-18 RUTUJA HARER	Joined bef	7/3/2021, 10:22:43 AM
C-26 KESHAV SAH	Joined before	7/4/2021, 10:57:46 AM	B-18 RUTUJA HARER	Left	7/3/2021, 10:31:53 AM
C-27 AMRUTA KHAMBE	Joined before	7/4/2021, 10:57:46 AM	B-2 AJIT ADAVALE	Joined bef	7/3/2021, 10:22:43 AM
C-28 PRASHANT KHARCHI	Joined before	7/4/2021, 10:57:46 AM	B-21 SIDDHANT JAGTAP	Joined bef	7/3/2021, 10:22:43 AM
C-30 BHAVESH KSHIRSAGAR	Joined before	7/4/2021, 10:57:46 AM	B-21 SIDDHANT JAGTAP	Left	7/3/2021, 10:24:40 AM
C-31 ANIKET LAMKHADE	Joined before	7/4/2021, 10:57:46 AM	B-21 SIDDHANT JAGTAP	Left	7/3/2021, 10:42:21 AM
C-33 MANDAR MANDAR	Joined before	7/4/2021, 10:57:46 AM	B-22 PARAS PARAS	Joined bef	7/3/2021, 10:22:43 AM
C-34 MANISH MANISH	Joined before	7/4/2021, 10:57:46 AM	B-23 JAYDEEP KADAM	Joined bef	7/3/2021, 10:22:43 AM
C-35 ABHAY MHASKE	Joined before	7/4/2021, 10:57:46 AM	B-23 JAYDEEP KADAM	Left	7/3/2021, 10:42:21 AM
C-36 MRUNAL MOHITE	Joined before	7/4/2021, 10:57:46 AM	B-24 SWARAJ KAKADE	Left	7/3/2021, 10:23:24 AM
C-37 TEJAS MOTE	Joined before	7/4/2021, 10:57:46 AM	B-24 SWARAJ KAKADE	Left	7/3/2021, 10:42:21 AM
C-38 DHANANJAY NERKAR	Joined before	7/4/2021, 10:57:46 AM	B-24 SWARAJ KAKADE	Joined bef	7/3/2021, 10:22:43 AM
C-39 SAURABH PANCHAL	Joined before	7/4/2021, 10:57:46 AM	B-24 SWARAJ KAKADE	Joined bef	7/3/2021, 10:22:43 AM
C-40 KHAGESH PATIL	Joined before	7/4/2021, 10:57:46 AM	B-26 LOKESH KHADSE	Joined bef	7/3/2021, 10:22:43 AM
C-41 MANDAR PAWAR	Joined before	7/4/2021, 10:57:46 AM	B-27 SAMJITH KHANDEBATH	Joined bef	7/3/2021, 10:22:43 AM
C-42 PRAGATI GUPTA	Joined before	7/4/2021, 10:57:46 AM	B-27 SAMJITH KHANDEBATH	Left	7/3/2021, 10:42:21 AM
C-43 RAJESHRI MORE	Joined before	7/4/2021, 10:57:46 AM	B-28 PRACHI KHOBRAGADE	Joined	7/3/2021, 10:43:07 AM
C-45 RISHIKESH KORPADE	Joined before	7/4/2021, 10:57:46 AM	B-28 PRACHI KHOBRAGADE	Left	7/3/2021, 10:42:21 AM
C-46 PRAJWAL SALUNKE	Joined before	7/4/2021, 10:57:46 AM	B-29 SHUBHAM KOKANE	Joined bef	7/3/2021, 10:22:43 AM
C-47 SANKET LOHANA	Joined before	7/4/2021, 10:57:46 AM	B-29 SHUBHAM KOKANE	Joined bef	7/3/2021, 10:22:43 AM
C-48 SAYYAD JUBER	Joined before	7/4/2021, 10:57:46 AM	B-29 SHUBHAM KOKANE	Joined bef	7/3/2021, 10:22:43 AM
C-51 HARSHITA SHUKLA	Joined before	7/4/2021, 10:57:46 AM	B-29 SHUBHAM KOKANE	Left	7/3/2021, 10:24:44 AM
C-51 HARSHITA SHUKLA	Left	7/4/2021, 10:57:51 AM	B-29 SHUBHAM KOKANE	Left	7/3/2021, 10:31:27 AM
C-52 ROHAN SONAWANE	Joined before	7/4/2021, 10:57:46 AM	B-29 SHUBHAM KOKANE	Left	7/3/2021, 10:42:21 AM
C-53 TANAY SINGH	Joined before	7/4/2021, 10:57:46 AM	B-3 ARYAN KOTMIRE	Joined bef	7/3/2021, 10:22:43 AM
C-57 POONAM TILEKAR	Joined before	7/4/2021, 10:57:46 AM	B-30 TUSHAR KUNGAR	Joined bef	7/3/2021, 10:22:43 AM
D-01 PRANAV AHER	Joined before	7/4/2021, 10:57:46 AM	B-30 TUSHAR KUNGAR	Left	7/3/2021, 10:42:21 AM
D-03 RUTUJA ANARSE	Joined before	7/4/2021, 10:57:46 AM	B-31 SAIPRASAD KUTE	Joined bef	7/3/2021, 10:22:43 AM

- Screen Shot of Project Exhibition Attendance



- Tutorials (M-I Tutorial)

Tutorial -Lpdf - Microsoft Excel

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1	Full Name	User Action	Timestamp										
2	SARITA MALI	Joined	2/24/2021, 9:00:48 AM										
3	D-07 RUTIK BHOSALE	Joined before	2/24/2021, 9:00:48 AM										
4	D-43 DIPKUMAR PRAJAPAT	Joined before	2/24/2021, 9:00:48 AM										
5	D-32 LOKESH SINGH	Joined before	2/24/2021, 9:00:48 AM										
6	D-46 SAKSHI BHALERAO	Joined before	2/24/2021, 9:00:48 AM										
7	D-13 ROHIT GAIKWAD	Joined before	2/24/2021, 9:00:48 AM										
8	D-09 ASHWINI DALVI	Joined before	2/24/2021, 9:00:48 AM										
9	D-41 SHRADDHA PATIL	Joined before	2/24/2021, 9:00:48 AM										
10	D-41 SHRADDHA PATIL	Left	2/24/2021, 9:06:16 AM										
11	D-41 SHRADDHA PATIL	Joined	2/24/2021, 9:06:40 AM										
12	D-41 SHRADDHA PATIL	Left	2/24/2021, 9:28:30 AM										
13	D-41 SHRADDHA PATIL	Joined	2/24/2021, 9:29:02 AM										
14	D-45 RUTUJA HUNDEKARI	Joined before	2/24/2021, 9:00:48 AM										
15	D-48 OMESH SATPUTE	Joined before	2/24/2021, 9:00:48 AM										
16	D-33 SAKSHI MANDOLIKAR	Joined	2/24/2021, 9:00:52 AM										
17	D-33 SAKSHI MANDOLIKAR	Left	2/24/2021, 9:27:06 AM										
18	D-33 SAKSHI MANDOLIKAR	Joined	2/24/2021, 9:28:05 AM										
19	D-33 SAKSHI MANDOLIKAR	Left	2/24/2021, 9:33:07 AM										

- Tutorials (M-II Tutorial)

Unit-3

Tutorial

Q.1. If $u = \tan^{-1}\left(\frac{x^3+y^3}{x+y}\right)$ then P.T

$$x^2 \frac{\partial^2 u}{\partial x^2} + 2xy \frac{\partial^2 u}{\partial x \partial y} + y^2 \frac{\partial^2 u}{\partial y^2} = \sin 2u [1 - 4 \sin^2 u]$$

Q.2. If $u = \sin^{-1}\left(\frac{x+y}{\sqrt{x}+\sqrt{y}}\right)$ then P.T

$$x^2 u_{xx} + 2xy u_{xy} + y^2 u_{yy} = -\frac{\sin u \cos 2u}{4 \cos^3 u}$$

Q.3. If $u = \log(\tan x + \tan y + \tan z)$ show that

$$\sin 2x \frac{\partial u}{\partial x} + \sin 2y \frac{\partial u}{\partial y} + \sin 2z \frac{\partial u}{\partial z} = 2$$

Q.4. If $u = f(r, s)$ and $x = x^2 + y^2$ and $s = x^2 - y^2$

then P.T $y \frac{\partial u}{\partial x} + x \frac{\partial u}{\partial y} = 4xy \frac{\partial u}{\partial x}$

Q.5. If $u = f(2x-3y, 3y-4z, 4z-2x)$ then find the

value of $\frac{1}{2} \frac{\partial u}{\partial x} + \frac{1}{3} \frac{\partial u}{\partial y} + \frac{1}{4} \frac{\partial u}{\partial z}$.

- Remedial Make-up Extra coaching classes conducted:

Remedial class Notice

Date: 14/4/2021

Respected All,

Remedial classes are important for the improvement of result, so it is kind request to all the faculty members to do it as early as possible. Submit the Remedial related Documents on 15/4/2021 before 4:00 pm and Display the Remedial Classes Timetable for Weaker Students.

Regards,
 Prof.P.S.Mhetre

Unit test result before remedial class

SINHGAD TECHNICAL EDUCATION SOCIETY'S
 SINHGAD INSTITUTE OF TECHNOLOGY, KUSGAON (BK.)LONAVALA
 DEPARTMENT OF ELECTRICAL ENGG.

Unit Test 1

Marks:30
 Date:7/4/21

Sr. No.	Name	Marks
1	AJAY DESAI	10
2	PRATHMESH DESHMUKH	22
3	HARSHAL GAIKWAD	21
4	SWARAJ GAISAMUDRE	10
5	ARJUN GEDAM	20
6	ADITYA GHODAKE	22
7	SARVESH GOBARE	22
8	SAIRAJ GUMUL	22
9	ANKITA JADHAV	23
10	ABHISHEK KADAM	24
11	Kakade Abhishek Anil	27
12	SUMEDH KAMBLE	28
13	KARAN SUKRE	11
14	Abhishek Kathole	12
15	AMOL KATHORE	12
16	pramay khandagale	14

17	AKASH KHEKADE	16
18	Vishal Khune	17
19	ANKITA KOKIL	18
20	YOGESH KOLTE	AB
21	RUSHIKESH LAGAME	AB
22	KARAN LANDGE	AB
23	BHARAT LOKHANDE	11
24	SUYOG MASKE	AB
25	PRATAP MAYURESHWAR	20
26	Monu Ranjan	22
27	saaransh nagrale	18
28	SHUBHAM NARAYANKAR	19
29	siddhesh nisal	12
30	ABHISHEK PATIL	11
31	RAJENDRA LINA	13
32	VAIBHAV PATIL	11
33	VAISHNAVI PATIL	12
34	PIYUSHA JUJGAR	17
35	SATISH PRATIK	18
36	Anil Kumar rajput	19
37	KAILAS POOJA	29
38	GANESH RATHOD	29
39	PRASHANT RATHOD	28
40	sai kumar reddy	20
41	PRAPHUL SALUNKHE	22
42	Nilesh Satpute	18
43	YASH SATPUTE	19
44	harsh shende	12
45	SHIVANAND HASURE	20
46	ANIRUDDHA SONTAKKE	22
47	OMKAR SWAMI	18
48	CHANAKYA TAMHANKAR	19
49	ARATI VIJAPURE	12
50	Aniket Waikar	30
51	Jayesh Wamane	25
52	Omkar Yeppurwar	30
53	GAWANDE KARTIKESH	30
54	Vikas Gutte	30
55	VISHAL DEVADE	23

Schedule

1) Remedial Classes for Subject:-FMA

All TE Students who Scored marks less than 15 in FMA subject in Unit test I have follow the remedial plan as follows

Sr.No.	Day	Date	Class	Time	Topics /Contents	Name of Faculty
1	Thursday	15/4/2021	TE	4.00PM to 5.00PM	Unit I	Prof.P.S. Mhetre
2	Friday	16/4/2021	TE	4.00PM to 5.00PM	Unit II	Prof.P.S. Mhetre
3	Saturday	17/4/2021	TE	4.00PM to 5.00PM	Unit III	Prof.P.S. Mhetre

Unit test result after remedial class

SINHGAD TECHNICAL EDUCATION SOCIETY'S

SINHGAD INSTITUTE OF TECHNOLOGY, KUSGAON (BK.)LONAVALA

DEPARTMENT OF ELECTRICAL ENGG.

Reunit Test 1

Marks:30

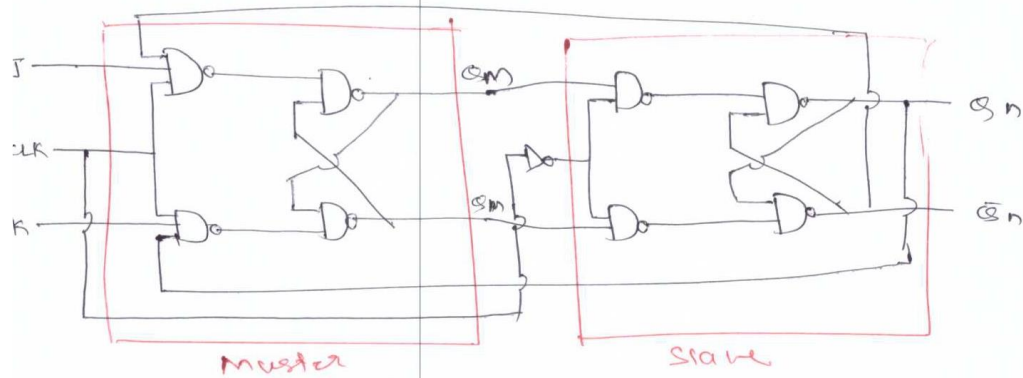
Date:21/4/21

Sr. No.	Name	Marks
1	AJAY DESAI	18
2	PRATHMESH DESHMUKH	22
3	HARSHAL GAIKWAD	21
4	SWARAJ GAISAMUDRE	19
5	ARJUN GEDAM	20
6	ADITYA GHODAKE	22
7	SARVESH GOBARE	22
8	SAIRAJ GUMUL	22
9	ANKITA JADHAV	23
10	ABHISHEK KADAM	24
11	Kakade Abhishek Anil	27
12	SUMEDH KAMBLE	28
13	KARAN SUKRE	19
14	Abhishek Kathole	20
15	AMOL KATHORE	21
16	pramay khandagale	25
17	AKASH KHEKADE	16
18	Vishal Khune	17
19	ANKITA KOKIL	18
20	YOGESH KOLTE	27
21	RUSHIKESH LAGAME	26
22	KARAN LANDGE	AB
23	BHARAT LOKHANDE	23
24	SUYOG MASKE	AB
25	PRATAP MAYURESHWAR	20
26	Monu Ranjan	22
27	saaransh nagrale	18
28	SHUBHAM NARAYANKAR	19
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32	VAIBHAV PATIL	30

33	VAISHNAVI PATIL	29
34	PIYUSHA JUJGAR	17
35	SATISH PRATIK	18
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49	ARATI VIJAPURE	27
50	Aniket Waikar	30
51	Jayesh Wamane	25
52	Omkar Yeppurwar	30
53	GAWANDE KARTIKESH	30
54	Vikas Gutte	30
55	VISHAL DEVADE	23

Important Study Material provided:

Master-Slave JK Flip-Flop. (ms)



- It consists of a JK Flip-Flop as a master & a clocked SR Flip-Flop as a slave.
 - The o/p of master Flip-Flop is fed to an i/p of slave Flip-Flop.
 - When $CP = 1$ the master's operation but slave is not operational. It receives the output & remains unchanged.
 - When $CP = 0$, the master is not operational but slave is operational & o/p changed.
- Ex-1 \rightarrow When $CP = 1$, $J = 0$, $K = 0$, the o/p of master remains unchanged at the clock, thus o/p of slave also remains same.
- Ex-2 \rightarrow When $CP = 1$, $J = 0$, $K = 1$, output of master is Reset i.e. $Q_m = 0$, $\bar{Q}_m = 1$. And as slave is not operational, thus it gives same o/p. i.e. $Q_n = 0$ & $\bar{Q}_n = 1$.
- Ex-3 \rightarrow When $CP = 1$, $J = 1$, $K = 0$, output of master is Set i.e. $Q_m = 1$ & $\bar{Q}_m = 0$. And as slave is not operational, thus it gives same o/p i.e. $Q_n = 1$ & $\bar{Q}_n = 0$.
- Ex-4 \rightarrow When $CP = 1$, $J = 1$, $K = 1$, the o/p of master toggles, thus o/p of slave also toggles.

Analog and Digital Electronics

Unit 1

Assignment No. 1

Q.1 Convert the following decimal numbers to its equivalent binary numbers (show step by step process)

i) 23.05 ii) 07572 iii) 85

6 marks

Q.2 Solve using Boolean algebra

$$F(A, B, C) = (A+B) \cdot (A+BC) + \overline{A}\overline{B} + \overline{A}C$$

6 marks

Q.3 State and prove De Morgan's theorem.

6 marks

Question banks are provided:

Unit 2		
Combinational and sequential circuit		
Flip Flops & counters		
Question		Marks
1	Draw and discuss logic diagram of SR flip flop and how to build JK flip flop using SR flip flop. Write the truth table for both	6
2	Explain 4 bit SISO shift register and hence explain twisted ring counter. Draw circuit diagram and truth table of 4 bit ripple counter	6
3	Draw circuit diagram and truth table of 4 bit ripple counter	6
4	Explain the following terms with reference to flip flops: Level triggering and edge triggering	6
5	Differentiate between synchronous and asynchronous counter. Draw and explain the circuit diagram of synchronous counter using JK flip flop	8
6	Explain JK flip flop in detail with input and output waveforms. Also give the functions of preset and clear pin	8
7	Design and explain MOD 5 asynchronous counter with related timing diagram	6
8	Explain edge and level triggered flip flops . Also explain D flip flop in detail	8
9	Explain the working of T flip flop	6
10	What is race around condition in JK flip flop? Explain techniques to avoid it	6
11	Give comparison between sequential and combinational logic circuit	6
12	Draw and explain working of 3 bit Johnson's ring counter	
13	Explain the working of D flip flop	6
Shift registers		

13	Explain the working of 3 bit SISO with clocked output	6
14	Explain 4 bit shift register with SIPO mode	8
15	With the help of neat diagram explain the operation of 4 bit parallel in serial out shift register	8
16	Draw and explain 4 bit bidirectional shift register	6

Guidance for SeminarProject presentation:

Sinhgad Institute Of Technology,Lonavala
Electrical Engineering Department

TE Seminar

SEM I 2020-21

Group No.	Roll.No	Name of Student	Name of guide
1	TE 01	ADHE MAYUR GANESHRAO	Prof.A.V Tamhane
	TE 02	AGARKAR RUSHIKESH ANIL	
	TE 03	AJAB AKASH SHIVAJI	
	TE 04	AMBEKAR DIVYA RAJU	
	TE 05	AMLE OMKAR RAMESH	
	TE 06	BAGLANE SURAJ SHRIKANT	
	TE 07	BANGAR ANIKET ANIL	
	TE 08	BHAGAT SUDISHA SATYAPRAKASH	
	TE 09	BHALERAO SANDESH ANANDRAO	
	TE 10	BODHE RITESH NANAJI	
2	TE 11	CHAVAN SHRIJAN ROHIDAS	Prof.M.S Shinde
	TE 12	CHOURE DEEPALI RAJENDRA	
	TE 13	DALVI RUSHIKESH SANJAY	
	TE 14	DESHMUKH VRUSHALI RAJENDRA	
	TE 15	DEVADE VISHAL SUBHASH	
	TE 16	DHANDE ONKAR PRAKASH	
	TE 17	DHUTADE PALLAVI SANJAY	
	TE 18	GADEKAR KARBHARI NIVRUTTI	
	TE 19	GAIKWAD DIPAK BALASAHEB	
	TE 20	GAIKWAD VISHAL DASHRATH	
3	TE 21	GAJBHIYE VIVEK SAHEBRAO	Prof.S. P. Mahangade
	TE 22	HUMBAD PRALHAD SUDAM	
	TE 23	JADHAV PRATAPSIKH TANAJI	
	TE 24	JAGTAP MANSI DIPAK	

	TE 25	KADAM AKSHAY SANJAY	
	TE 26	KADAM PARMESHWAR VISHNU	
	TE 27	KALE SHUBHADA SURESH	
	TE 28	KARTIK RAJESH MANTHANWAR	
	TE 29	KHANDARKAR PAVAN KISHOR	
	TE 30	KOLI SAURAV BALU	
4	TE 31	KORDE AMBADAS BABURAO	Prof.S.B Jadhav
	TE 32	LOKHANDE SACHIN SUBHASH	
	TE 33	MAHAJAN SHUBHAM PRAVIN	
	TE 34	MAHER NIKHEEL MAHENDRASING	
	TE 35	MANKAR SHUBHAM BABAJI	
	TE 36	MEHRUDDIN ALI	
	TE 37	MORE GIRISH SANTOSH	
	TE 38	MULE HRUSHIKESH POPAT	
	TE 39	NARUTE MAHESH RAMESH	
	TE 40	PANDAGALE HRISHIKESH SHANKAR	
5	TE 41	PATHAK TEJAS SHARAD	Prof.P.D.Sonawane
	TE 42	PATIL PRASAD BAJIRAO	
	TE 43	PAWAR VISHAL SOPANRAO	
	TE 44	PIYUSH SANTOSH SHENDRE	
	TE 45	POWAR JATIN SANTOSH	
	TE 46	PRAFULL KISAN CHASKAR	
	TE 47	RATHOD SANGRAM VILAS	
	TE 48	RAUT ANKUSH SANJAY	
	TE 49	SACHIN KUMAR	
	TE 50	SAGAR PRASHANT PATIL	
6	TE 51	SAKHARE ABHIJEET DASHRATH	Prof.S.V Tade
	TE 52	SASTE SUMIT BAPURAO	
	TE 53	SHAIKH ANIS AKHIL	
	TE 54	SHELGE ASHISH SHYAM	
	TE 55	SHINDE MAHESH MAHAVIR	
	TE 56	SONKAMBLE KISHOR MADHUKAR	
	TE 57	SUBHEDAR ROHIT BALAJI	
	TE 58	SURALKAR MANGESH SHATRUGHNA	
	TE 59	SWAMI ASHISH SIDRAM	
	TE 60	TANMAY NITIN CHAUDHARI	

7	TE 61	VELHAL AKASH POPAT	Prof.P.S. Mhetre
	TE 62	WANI SAURABH VILAS	
	TE 63	WELADI ROSHAN KOHALA	
	TE 64	AMATE BALASAHEB ARJUN	
	TE 65	AVHAD ANANT MANIK	
	TE 66	GAIKWAD MAHESH DADASAHEB	
	TE 67	GAIKWAD SAMRUDDHI SURESH	
	TE 68	GAWALI NARENDRA FULCHAND	
	TE 69	GHOHARE NIKHIL SATISH	
	TE 70	KAPADE ASHISH ATUL	
8	TE 71	KOKATE HRISHIKESH DIPAK	Prof.M.N Kalgunde
	TE 72	PAKHARE PRIYA JAGANNATH	
	TE 73	RAMTEKE ADITYA	
	TE 74	SANKET SUBHASH THAWARI	
	TE 75	SHAM GOVIND JADHAV	
	TE 76	KHANDAGALE AJINKYA SANJAY	
	TE 77	PARMAR KOMAL MOHAN	
	TE 78	Warbade Chaitanya Jotiram	