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ASSIGNMENT FOR DIPLOMA IN ELECTRICAL 3rd SEM.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60words) of 4 marks each. Part B will have 4 long answer questions of 5 marks each.

All questions are compulsory.

These Assignments should be completed and submitted in written form by the student

to his/her respective Faculty/ Examiners. Assignment Submission Dates are:

List Of Suggested Questions

The list of suggested questions is for students to practice. Although optional, we recommend that

students solve these questions, as they will help them in preparing for exams as well as in clearing

the important concepts of the subject.

List of Practical and suggested practical's

The list of practical's should be done by the students in their Lab Sessions. These are the basic

practical's, which each student should be able to do himself independently. While the list of

suggested practicals are optional, but it is recommended that students should perform those practical

so as to have a thorough knowledge of the subject

Education Delivery Schedule (EDS)

As per University Semester scheme, the minimum contact hours of each paper has been

Divided into two hours theory and practical class.

The faculty will maintain this attendance paper wise for his/her batch.

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SUBJECT CODE	SUBJECT NAME
DAS-31	Applied mathematics-3
DEE-31	Electrical instrumentation & measurments
DMC-31	Elementary mechanical & civil engg.
DEE-32	Electrical m/c-1

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Cover page of Assignment

ID NUMBER …………………………………

NAME   ……………………………… ……

COURSE   …….…..…………

STREAM   …………………

SEM   ……………………………….

SUBJECT CODE ……………………………………

SUBJECT NAME ……………………………………

Assignments will be completed by the Student in his/her own handwriting.

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APPLIED MATHEMATICS-3

PART-A

1. Differentiate **(sin x)** ^{cosx} with respect to **x**.

2. Find the angle between the curves

$$f(x) = 4 - x^2 \text{ and } \quad g(x) = x^2.$$

3. Find the standard deviation of the following data :

38, 70, 48, 34, 42, 55, 63, 46, 54, 44.

4. If z_1 and z_2 are two complex numbers, then

show' that $| z_1 + z_2 | \le | z_1 | + | z_2 |$.

5. Find the different values of $(1 + i)^{1/3}$

PART-B

1. Compute the variance of the probability of the number of doublets in four throws of a pair of dice.

2. A manufacturer knows that the condensers, he makes contain on an average 1% defectives. He packs them in boxes of 100. What is the probability that a box selected at random will contain 3 or more defective condensers ?

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DEE-31 ELECTRICAL INSTRUMENTATION & MEASURMENTS

PART-A

1. Give the block diagram of an integrating type Digital Voltmeter (DVM) and explain its operation

   as a voltage-to-frequency converter. Also prove that the output frequency is proportional to the

   input voltage.

2. Explain the operation of a Digital Multimeter (DMM) with the help of a neatly labeled block diagram.

3. Give the block diagram of a digital storage oscilloscope and explain its operation. List the desirable features of a digital storage oscilloscope.

4. Explain the operation of RF-type signal generators with the help of a neatly labelled block diagram.
5. With the help of a neatly labelled block diagram, explain the operation of a Logic Analyzer.

PART-B

. 1. Write technical notes on the following :

   (a) Calibration of instruments

   (b) Analog Multimeters

    (c) Use of CRO for frequency and phase measurement

   (d) Function Generator and Pulse Generator.

2. What is the difference between accuracy and precision ? List four possible sources of errors in

   instruments.

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Electrical M/a-1

PART-A

1. Explain open circuit and short circuit tests conducted on transformers.

2. Explain the concept of rotating magnetic field and working of a 3-phase induction motor.

3. Draw and explain the torque — slip characteristic of a 3-phase induction motor. Discuss the effect of rotor resistance on torque —slip cuvves.

4. Explain the working principle of a synchronous motor.

5. What is meant by 'armature reaction' ? Discuss the methods to improve commutation process in a d.c. machine in detail.

PART-B

1.   Write short notes on the following :

   (a) Speed Control of DC-Motor

   (b) Tap Changing Transformer

   (c) Characteristics of DC Shunt and Series Generators

2. What do you understand by Autotransformer' ? Discuss the advantages, disadvantages and applications of an autotransformer.