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ASSIGNMENT FOR DIPLOMA IN MECHANICAL 4TH 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
DME 1	Mechanics of Solid
DME 2	Hydraulics & Hydraulic Machines
DME3	Electrical Technology & Electronics
DME 4	Mechanical Engg. Drawing

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Cover page of Assignment

ID NUMBER ……

NAME …… ……

COURSE DIPLOMA……..…..……

STREAM MECHANICAL……

SEM 4 TH ……

SUBJECT CODE ……

SUBJECT NAME ……

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

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Mechanics of Solid

PART-A

1. Define and explain : (i) Modulus of Elasticity (ii) Poisson's ratio (iii) Modulus of rigidity.

2. A load of 1900 kN is applied on a short concrete column 300 mm x 200 mm. The column is reinforced with four steel bars of 10 mm diameter, one in each corner. Find the stresses in the concrete and steel bars. Take E for steel as 2.1 x 105 N/mm2 and for concrete as 1.4 x 104 N/mm2 . 04

3. A steel bar is placed between two copper bars each having the same area and length as the steel bar at 15°C. At this stage, they are rigidly connected together at both the ends. When the temperature is raised to 315°C, the length of the bars increases by 1.5 mm. Determine final stresses in the bar and original length of the bar. E steel = 210 GN/m2 , E copper = 110 GN/m2 , α (steel) = 0.000012 /°C, α(copper)= 0.0000175 /°C.

4. Define principal planes and principal stresses.

5. Define:

(i) Equilibrium force

(ii) Principle of superposition

(iii) Principle of transmissibility.

PART-B

1. Explain : Varignon's theorem 03

2. Define :

(i) Angle of friction

(ii) Limiting friction

(iii) Coefficient of friction

(iv) Angle of repose.

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Hydraulics & Hydraulic Machines

PART-A

1. 1What do you understand by "Flow in open channel" ? Explain.
2. What is a specific energy curve ? Derive an expression for critical depth and critical velocity.
3. Find an expression for loss of energy head for a hydraulic jump.
4. Describe critical depth, critical velocity, specific energy and specific force.
5. Describe the classification of flow in open channels.

PART-B

. 1. Describe a centrifugal pump and its main parts, with the help of a neat sketch.
2. With neat diagrams, explain the GVF of open channel.

Electrical Technology & Electronics

PART-A

1. Describe the working of radius gauge with suitable diagram.
2. Explain any two methods of an ar measurement.
3. What are slip gauges ? Discuss their uses and advantages.
4. Explain the working of Try square and Straight edge with the help of suitable diagrams.
5. What are limit gauges ? Explain their uses

PART-B

1. List and explain three important parameters used in case of external screw thread. Measurement.
2. Describe torque-slip curve of three-phase induction motor.

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Mechanical Engg. Drawing

PART-A

Q.1 (a) Define Dimensioning.

(b) What are the general uses of Enlarging-scale and scale of chord ?

Q.2 (a) Write down the name of different conic-sections.

(b) With the help of simple sketches, define the Reference-planes and Reference-line.

Q3. (a) Write down only the names of methods which are used in the construction of ellipse when both major and minor axes are given.

(b) Name the five types of solids and sketch any two of them.

Q4. (a) What is the difference between plain scale and diagonal scale ?

(b) Draw ellipse on some suitable scale and show its different parameters.

PART-B

Q1. An area of 160 sq. cm. on a map represents an area of 40 sq. km. on the field. Calculate the value of representative fraction (R.F.) of this scale.

Q2. What are the different positions of a "PLANE" with respect to the reference plane i.e. H.P. and V.P. ?