Sai Nath University

Assignment For B.TECH in Mechanical Engineering 7st Sem.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60 words) of 4 marks each. Part B will have 2 long answer questions of 10 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:

> ➢ Nov-17

List Of Suggested Questions

The list of suggested questions are 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.

Subject Code	Subject Name
BTME -701	CAD/ CAM (Application) & Automation
BTME -702	Meteorology & Quality Control
BTME-703	I.C. Engines & Automobile Engineering
BTME -704	Finite Elements Methods in Engineering
BTME 705	Meteorology & Quality Control Practical

SAI NATH UNIVERSITY

Cover page of Assignment

ID NUMBER ………………………………………….

NAME ………………………………. …………

COURSE **B.Tech**……………………

STREAM Mechanical…………………………………

SEM 7ST………………………………………..

SUBJECT CODE ………………………………………..

SUBJECT NAME ………………………………………..

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

BTME 701
CAD/ CAM (Application) & Automation
Part A

1. Compare CSG and B-rep technique of solid modeling with neat sketch.

2. Compare CSG and B-rep technique of solid modeling with neat sketch.

3. Explain penalty approach of solving FEM problem.

4. Explain penalty approach of solving FEM problem.

5. An axial step bar is shown in figure 1. Determine deflection and stresses in element and reaction force image.

Part B

1. Explain G28,G04,G41 code in part programming

2. Explain G28,G04,G40 and G41 code in part programming.

BTME 702
Meteorology & Quality Control

Part A

1. Define uncertainty in measurement and state repeatability and reproducibility of measurement.

2. Explain angle Dekker with ray diagram and its application.

3. Explain N.P.L. Flatness interferometer with neat sketch and write its application.

4. Explain the method of measuring effective diameter using three wires with neat sketch.

5. State the Taylor's principal for designing the limit gauges.

Part B

1. Explain Tool Maker's microscope and their application.

2. Write the type of errors in gear metrology.

BTME-703
I.C. Engines & Automobile Engineering

Part A

1. Define mean effective pressure and stoichiometric air-fuel ratio.

2. Define Octane number of a fuel and antiknock index.

3. Draw the p-v diagram of an ideal Diesel cycle and indicate the various processes.

4. What do you mean by Lean Burn Engines?

5. How pollution is controlled in SI engine?

Part B

1. Brief the modifications to be done in an engine to make it suitable for supercharging.

2. Write a short note on electronic fuel injection system.

BTME-704
Finite Elements Methods in Engineering

Part A

1. Write the comparison of Finite element method with other methods

2. Write the properties of element stiffness matrix.

3. Explain the Eigen value evaluation methods in detail.

4. Write a short note on the following:

(a) Patch test

(b) Sub parametric elements

5. Explain the Eigen value evaluation methods in detail.

Part B

1. Discuss in detail serendipity and Lagrange interpolation functions
2. Explain how boundary conditions are handled in FEM

BTME-705
Meteorology & Quality Control Practical

Part A

1. Explain principle's of Engineering metrology in details.(6 marks)
2. Write a note on laser I nterferometer.(4 marks)
3. Explain different methods of measuring flatness.(6 marks)
4. Differentiate between primary texture and secondary texture.
5. Write a note on span gauging.

Part B

1. Explain Deming's fourteen points in details.(8 marks)
2. Explain seven New Quality tools.