

JS UNIVERSITY

ASSIGNMENT FOR B.TECH IN MECHANICAL VIIth 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: **Dec-2023**

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 practical's 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
BME 1	QUALITY MANAGEMENT
BME 2	COMPUTER AIDED DESIGN (CAD)
BME 3	AUTOMOBILE ENGINEERING
BME 4	COMPUTER AIDED MANUFACTURING (CAM)
BME 5	MECHANICAL SYSTEM DESIGN

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Cover page of Assignment

ID NUMBER

NAME

COURSE BTECH.....

STREAM MECHANICAL.....

SEM 2nd

SUBJECT CODE

SUBJECT NAME

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

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QUALITY MANAGEMENT

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. Explain any two different methods of displacement measurement.
2. What are transducers ? Explain the working of capacitive transducer.

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COMPUTER AIDED DESIGN (CAD)

PART-A

1. What is direct view storage tube ? How do you differentiate Random scan display from Raster scan display ?
2. What are the input devices used in CAD system ? Explain any two with neat sketches.
3. Explain the functions of graphic software with suitable examples.
4. What does IGES represent in a CAD system ? Elaborate.
5. Explain constructive solid geometry (CSG) and Boundary representations with suitable examples.

PART-B

1. Discuss the following terms with suitable examples :
 - (i) Windows and Clipping
 - (ii) 3D Transformations
2. Find the real root of the equation by using bisection method : $x^3 - 4x - 9 = 0$

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AUTOMOBILE ENGINEERING

PART-A

1. Describe the working of Ackerman's steering system used in automobile.
2. Explain the working principle of a constant mesh gear box with the help of a neat sketch.
3. What is need of carburetor an automobile ? Explain its working principle.
4. Why ignition system is required in automobile ? Explain any one of them in detail.
5. With the help of neat sketch differentiate and explain front wheel drive and rear wheel drive.

PART-B

1. Explain the working principle of differential gear box with the help of neat sketch.
2. Why clutch is required in an automobile ? Classify different types of clutch and explain briefly.

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COMPUTER AIDED MANUFACTURING (CAM)

PART-A

- Q1. Write advantages & disadvantages of CNC machines.
- Q2. Explain various stages involved with NC manufacturing. How do they differ from conventional manufacturing stages?
- Q3. Explain with neat sketches the following:
- a) Machine zero
 - b) Program zero
 - c) Part zero
- Q4. Name different punch tape readers & explain any two of them.
- Q5. Explain briefly the constructional features ball screw with neat sketches & state its application.

PART-B

- Q1. What are different types of computer aided process planning? Explain with suitable examples.
- Q2. Write short notes on:
- (i) Robot sensors &
 - (ii) End-effectors in robots.

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MECHANICAL SYSTEM DESIGN

PART-A

1. Give the basic constructional details of different types ropes EOTcrane. And what do you understand by 6×37 rope?
2. Explain different types of take-up arrangement used in belt conveyors.
3. What are the different types of piston rings? Explain the functions of them.
4. What are the materials used for the following I.C. Engine components. Justify
 - a) Cylinder block
 - b) Crank shaft
 - c) Connecting rod
 - d) Gudgeon pin.
5. Explain with diagrams, how the structure and ray diagrams are different from each other in multi-speed gear box.
6. What do you mean by morphology of mechanical design? Explain any two phases of it.

PART-B

1. What do you mean by morphology of mechanical design? Explain any two phases of it.
2. What are the different types of gear pump. Explain with sketch, the working of any one of them.