

CBCS SCHEME



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BESCK104D

First Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

Introduction to Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

| Module – 1 | | | | M | L | C |
|-------------------|----|---|----|----|-----|---|
| Q.1 | a. | With a neat sketch explain Nuclear Power Plant. | 10 | L2 | CO1 | |
| | b. | Briefly explain the emerging trends and technologies in the following sectors: i) Aerospace sector ii) Marine sector | 10 | L2 | CO1 | |
| OR | | | | | | |
| Q.2 | a. | With a neat sketch explain the working principle of Solar Power Plant. | 10 | L2 | CO1 | |
| | b. | Briefly explain the following : i) Global warming ii) Ozone depletion | 10 | L2 | CO1 | |
| Module – 2 | | | | | | |
| Q.3 | a. | With a neat sketch explain the following lathe operations: i) Turning ii) Knurling iii) Facing | 12 | L2 | CO2 | |
| | b. | Write a short note on 3D printing and mention the advantages of 3D printing. | 08 | L2 | CO2 | |
| OR | | | | | | |
| Q.4 | a. | With a schematic diagram explain the following drilling operations: i) Boring ii) Reaming iii) Drilling | 12 | L2 | CO2 | |
| | b. | List out the advantages and disadvantages of CNC. | 08 | L2 | CO2 | |
| Module – 3 | | | | | | |
| Q.5 | a. | With a neat sketch explain the working principle of 4-S Diesel engine with P-V diagram. | 10 | L2 | CO3 | |
| | b. | Write the advantages and disadvantages of EVS and Hybrid vehicles. | 10 | L2 | CO3 | |
| OR | | | | | | |
| Q.6 | a. | Briefly explain the components of hybrid vehicles. | 10 | L2 | CO3 | |
| | b. | With a neat sketch explain the working principle of 4-S petrol engine with P-V Diagram. | 10 | L2 | CO3 | |
| Module – 4 | | | | | | |
| Q.7 | a. | Write the classification of Engineering Materials. | 06 | L2 | CO4 | |
| | b. | Write a short note on Shape Memory Alloys. | 06 | L2 | CO4 | |
| | c. | Write the differences between Soldering and Brazing. | 08 | L2 | CO4 | |
| OR | | | | | | |
| Q.8 | a. | With a neat sketch explain the working principle of gas welding. | 08 | L2 | CO4 | |
| | b. | With a neat sketch explain the types of flames in gas welding. | 06 | L2 | CO4 | |
| | c. | Write the applications of following materials: i) Cast iron ii) HSS iii) Copper iv) Aluminium | 06 | L2 | CO4 | |
| Module – 5 | | | | | | |
| Q.9 | a. | With a neat sketch explain the robot configuration. | 10 | L2 | CO5 | |
| | b. | With a block diagram explain the types of automation. | 10 | L2 | CO5 | |
| OR | | | | | | |
| Q.10 | a. | Define IoT. Explain the characteristics of IoT. | 10 | L2 | CO5 | |
| | b. | With a neat sketch explain the open loop and closed loop control system. | 10 | L2 | CO5 | |
