

End Semester/ Reappear (Semester III) Examination December 2024

Programme: Diploma (MiE)
Course: Mechanical Engineering
Course Code: 8D.201
Enrolment no. _____

Full Marks: 70
Time: 3 Hrs.

Section I

- 1. Short Answer type questions. Answer any four. 4 x 5 = 20**
- Compare between ferrous and non-ferrous metals with suitable examples
 - Explain the working of friction clutch in brief.
 - Define volumetric efficiency, Isothermal efficiency & Mechanical efficiency of air compressor.
 - Explain the working of centrifugal pump with diagram.
 - Explain the working of two stage reciprocating air compressor with diagram.
 - Define heat treatment. Write its objective and classifications.

Section II

- Long Answer type questions. Answer any three. 3 x 10 = 30**
- Draw Hydraulic circuit and explain its components.
 - Define carbon steel. Write the classification of carbon steel depending upon the percentage of carbon in steel. Also write their application.
 - Explain the working of hydraulic brake used in automobile.
 - Discuss the process of Production of stainless steel from Iron Ore. Also draw the flowchart describing the same.
 - Explain the working of centrifugal compressor with diagram and write its uses.

Section III

- Application based questions. Answer any one. 1 x 20 = 20**
- Explain the working of four stroke Spark Ignition engine with diagram. Compare between two and four stroke engine.
 - Write the constructional details and working of hydraulic shaper machine with diagram.
 - Write the chemical composition, properties and uses of Chromium steel.
 - Discuss the following mechanical properties of material:
i. Strength, ii. Toughness iii. Ductility iv. Malleability v. Hardness
