

3059

B. Tech. (ME) 3rd Semester (G-Scheme)

Examination, December-2024

BASICS OF MECHANICAL ENGINEERING

Paper-ESC-ME-211G

Time allowed : 3 hours]

[Maximum marks : 75

Note : Attempt any five questions in all, selecting one question from each unit. Question No. 1 is compulsory. All questions carry equal marks.

1. Explain the following: 6×2.5=15
- (a) Working principle of shaper
 - (b). Strain and types of strain
 - (c) Limitations of manual part programming
 - (d) Zeroth Law of Thermodynamics
 - (e) Working of clutch
 - (f) Working of pelton turbine

Unit-I

2. Describe the different machining operations that can be performed on a Lathe Machine. 15
3. Define first law of thermodynamics. Discuss the limitations of first law of thermodynamics. 15

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Unit-II

4. Discuss the different thermodynamic properties of steam. 15
5. Explain different types of turbine. Also derive the efficiency of pelton wheel. 15

Unit-III

6. Derive velocity ratio of simple and compound belt drive. 15
7. Explain the stress-strain diagram in details. 15

Unit-IV

8. What are NC Machines? Explain their classification in details. 15
9. Explain Manufacturing systems. What are the difference between NC and CNC Machines. 15