

Roll No. ....

**3059**

**B. Tech. 3rd Semester (ME)  
Examination – February, 2022**

**BASICS OF MECHANICAL ENGG.**

**Paper : ESC-ME-211-G**

*Time : Three Hours ]*

*[ Maximum Marks : 75*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt *five* questions in all. Question No. 1 is *compulsory* and attempt *one* question from each Unit.

1. Write about : 2.5 × 6 = 15
- (a) Dryness Fraction
  - (b) Enthalpy
  - (c) Coefficient of performance
  - (d) Specific speed of turbine

- (e) Hook's Law
- (f) CNC System

### UNIT - I

- 2. Write about :
  - (a) Metal Cutting 8
  - (b) 2nd Law of thermodynamics. 7
- 3. Discuss in detail about measurement of dryness fraction by throttling calorimeter. 15

### UNIT - II

- 4. Explain simple refrigeration vapour compression cycle with neat sketch. 15
- 5. Explain construction and working of Francis turbine with neat sketch. 15

### UNIT - III

- 6. Discuss in detail about types and functioning of clutches. 15
- 7. Discuss in detail about Elastic constants and their relationships. 15

### UNIT - IV

- 8. What is NC System ? Explain working of NC system with neat diagram. 15
  - 9. Write about :
    - (a) Introduction of manufacturing system. 10
    - (b) Advantages of NC systems. 5
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