

Roll No. ....

**3059**

**B. Tech. 3rd Semester (ME)**  
**Examination – December, 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, selecting **one** question from each Unit. Question No. 1 is **compulsory**. All questions carry equal marks.

1. Write about :  $2.5 \times 6 = 15$
- (a) Metal cutting
  - (b) Human comfort
  - (c) Concept of internal energy
  - (d) Functioning of clutch

(e) Poisson's ratio

(f) Advantages of CNC system

#### **UNIT - I**

2. What is manufacturing process ? Explain working of Lathe machine with neat diagram. 15

3. Discuss in detail about thermodynamic properties of steam. 15

#### **UNIT - II**

4. Explain simple refrigeration vapour compression cycle with neat sketch. 15

5. Explain construction and working of Pelton turbine with neat sketch. 15

#### **UNIT - III**

6. Discuss :

(a) Introduction of power transmission

8

(b) Gear drive

7

7. Explain the concept and types of stresses and strains with neat diagrams. 15

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#### **UNIT - IV**

8. What is NC system ? Explain different components of NC system with their merits and demerits. 15

9. Discuss in detail about classification of NC systems with neat diagrams. 15

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