

Roll No.

24008

B. Tech. 1st Sem.

Examination – December, 2015

BASICS OF MECHANICAL ENGG.

Paper : ME-101-F

Time : Three Hours]

[Maximum Marks : 100

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. Question number 1 is compulsory and attempt at least one question from each section.

1. Explain following :

4 × 5 = 20

- (a) What is Zeroth law of thermodynamics ? Explain with example.
- (b) What are human comfort conditions ? Explain.
- (c) Draw Stress Strain Diagram for Mild Steel.

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(d) What is a NC and CNC system ?

SECTION - A

2. Differentiate between shaper and planer machine with neat and labelled diagrams. 20

3. Explain 2nd. Law of Thermodynamics with reference to Kelvin Planck statement and Clausius statement in detail. 20

SECTION - B

4. Explain construction & working of a Pelton Turbine with the help of a neat and labelled sketch. 20

5. What is Psychrometry ? Explain different psychrometric process with diagram. 20

SECTION - C

6. Derive an expression for the length of open loop belt drive in Power transmission. 20

7. Derive an expression for a shaft subjected to Bending i.e. $M/I = E/R = \sigma/y$. 20

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SECTION - D

8. What is difference between NC & CNC system ? Explain their relative advantages and disadvantages. 20

9. What is NC system ? Explain different component of NC system with their merits and demerits. 20

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