

S. B. Roll. No.....

THERMODYNAMICS-I
4th Exam/Mech./5253/Jun'2021
(For 2018 Batch Onwards)

Duration: 1.15Hrs.

M.Marks:25

SECTION-A

Q1. Attempt any three questions.

3x5=15

- i. Explain Charles Law with neat sketch.
- ii. What do you mean by intensive and extensive property? Give two examples of each.
- iii. Explain Mollier Chart with help of a neat sketch.
- iv. Define First Law of thermodynamics? Also explain its mathematic expression.
- v. Write the comparison of fire tube boiler and water tube boiler.
- vi. Discuss open, closed and isolated systems with the help of neat sketches.
- vii. Compare a reciprocating air compressor and a rotary air compressor.
- viii. Explain the difference between dry steam and wet steam.

SECTION-B

Q2. Attempt any one question.

1x10=10

- a. A gas is compressed poly tropically from its initial volume of 0.67 m^3 and initial pressure of 2 bars to final pressure of 30 bars. If the initial temperature of the gas is 40°C . Assuming Polytropic Index to be 1.2, find
 - i) Final Volume ii) Final Temperature iii) Work to be done on the gas for Compression.
- b. Derive expression of relation between the two Specific heat constants and characteristics gas constant.
- c. Explain formation of steam with a neat sketch.
- d. Explain the following: **a)** Quality of Steam **b)** Dryness Fraction **c)** Diesel cycle