Roll No ....

AU/IP/IEM/PR/ME-304 (GS)

B.E. III Semester Examination, June 2020
Grading System (GS)
Thermodynamics
Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions.
   ii)   All questions carry equal marks.

1. State Zeroth law of thermodynamics. What is its significance?

2. Define the characteristic gas constant and write its units.

3. Define COP of heat pump and refrigerator?

4. State first law of thermodynamics for a closed system. Which is the property introduced by this law.

5. Draw a neat sketch of Otto cycle and derive an expression for the efficiency of Diesel Cycle.

6. Write down the Vander Waals equation of state. What is force of cohesion? What is co volume?

OR

What is Dryness fraction? Explain any one method of measuring dryness fraction.

7. Explain the following :
   i)   Carnot's Theorem
   ii)   Gibbs and Helmholtz function

OR

Draw the phase equilibrium diagram for a pure substance on P-T co-ordinates. Why does the fusion line for water have negative slope.

8. Write short notes on any two :
   i)   Heat pump
   ii)   Carnot cycle
   iii)   2nd law of thermodynamics

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