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B.Tech. (M.E.) 4th Semester (G-Scheme)
Examination, July–2022
APPLIED THERMODYNAMICS
Paper– PCC-ME-202-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : *In this questions paper, there are* ***Nine*** *Number of Questions.* ***Question No. 1 is compulsory.*** *Candidates are required to attempt* ***five*** *questions and selecting* ***one*** *question from each unit. All questions carry equal marks.*

1. (i) Define adiabatic flame temp

(ii) Draw P-V and T-S diagram of Rankine cycle

(iii) Define dew point

(iv) Define optimal stage pressure ratio

(v) Define specific humidity and relative humidity.

(vi) Explain efficiency of a nozzle. 2.5×6=15

Unit - I

2. Explain in details exhaust gas Analyzer.

3. Explain the different types of solid, liquid and gaseous fuels. 15

Unit - II

4. Explain in detail Air standard Otto cycle. Explain its efficiency and mean effective pressure. 15

5. Explain in detail vapour compression refrigeration cycles. 15

Unit - III

6. Explain various psychrometric RB properties in detail. 15

7. Explain the following: 15

   (i) Stagnation properties

   (ii) Isentropic flow of a perfect gas through a nozzle.

Unit - IV

8. Explain reciprocating compressors and staging of reciprocating compressors in detail. 15

9. Explain velocity and pressure compounding of steam turbines in detail. 15