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Total number of pages: [1]

Total number of questions: 09

B.Tech. -ME/ 3rd Sem

Applied Thermodynamics-I

Subject Code: ME-209

Batch: 2004 onwards

Time allowed: 3 Hrs

Max Marks: 60

Important Instructions:

- Section A is compulsory
- Attempt any four questions from section B
- Attempt any two questions from section C

PART A (2×10)

Q. 1. Answer in brief:

- Define dryness fraction.
- List water tube boilers.
- What do you understand by combined power and heating cycles.
- What is Supersaturated flow.
- Define Stage efficiency of impulse turbine.
- Explain Labyrinth packing?
- List elements of condensing plant.
- What is the best value of index of compression?
- State the function of steam accumulators.
- What do you mean by sensible heating and latent heating?

PART B (5×4)

- Q. 2. Give the constructional and working details of Locomotive Boiler with the help of neat sketch.
- Q. 3. Differentiate between impulse turbine and impulse-reaction turbine.
- Q. 4. Discuss surface condenser. Give constructional detail of any one.
- Q. 5. What are the effects of friction on nozzle performance?
- Q. 6. Classify the air compressors. Draw Schematic diagram of single stage reciprocating compressors.

PART C (10×2)

- Q. 7. Explain combined reheat regenerative cycle with the help of T-S diagram. Also derive the expression for thermal efficiency.
- Q. 8. What do you understand by Governing of steam turbines? Discuss in detail.
- Q. 9. Discuss the followings:
 - (i) Combustion problems in boiler
 - (ii) Boiler mountings and accessories