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Total number of pages:[02]

Total number of questions: 06

B.Tech. -EE/ 4th Sem

Power Plant Engineering

Subject Code: BTEE-406

Paper ID:

Time allowed: 3 Hrs

Max Marks: 60

Important Instructions:

- All questions are compulsory
- Assume any missing data

PART A (2×10)

Q. 1.

- What is mass defect?
- What is gas analysis?
- List down the safety measures for Nuclear Power Plant.
- What is Supercharging?
- What do you understand by Reheat- Regenerative cycle?
- Draw the pneumatic ash handling system.
- What do you mean by a Catchment Area and a Reservoir?
- How the hydro-electric power plants are classified?
- Define the term Celane number.
- What are the desirable properties of a good moderator?

PART B (5×8marks)

- Q. 2. What are the Gaseous Pollutants discharged by Thermal Power Plants? How they can be controlled? CO1

OR

Explain the working of coal handling system and fluidized bed combustion. CO1

- Q. 3. Give the layout of a Modern Steam Power Plant and explain it. CO2

OR

Draw the Layout of hydro-electric power plant and explain it. CO2

- Q. 4. With the help of diagram explain the construction and working of a Four Stroke Diesel Cycle Engine. CO1

OR

Explain with neat sketches the construction and working of Locomotive Boiler and Cochran boiler. CO1

- Q. 5. The air leakage into condenser operating in conjunction with a steam turbine is estimated at 30kg/hr. The vacuum near the outlet to the air pump is 72.4 cm (barometer 76 cm) and temp. at this point is 200C. Find the (i) Minimum capacity of air pump (ii) Mass of vapour extracted with the air per minute. Given vapour pressure corresponding to 200C = 0.0226 bar and specific volume = 60.86m³/kg CO4

OR

The brake thermal efficiency of a diesel engine is 30 percent. If the air to fuel ratio by weight is 20 and the calorific value of the fuel used is 41800KJ/kg, what brake mean effective pressure may be expected at S.T.P. conditions? CO4

- Q. 6. What are the advantages of operating the power plants Combined in Electric Power System? CO3

OR

Describe with the help of neat sketch the construction and working of Pressurised Water Reactor. CO3