

CT Inst. of E

Roll No. 

Total No. of Pages : 03

Total No. of Questions : 09

B.Tech. (EE/EEE) (Sem.-6)

**POWER PLANT ENGINEERING**

Subject Code : ME-352

Paper ID : [A0423]

Time : 3 Hrs.

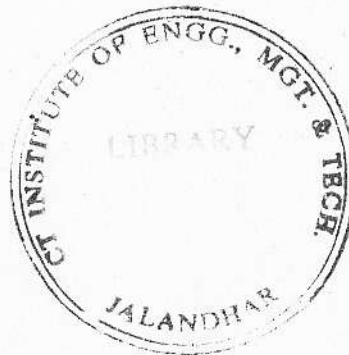
Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A****1. Write briefly :**

- a) What is the function of Draft tube?
- b) What is water hammer?
- c) Name the different boiler accessories.
- d) Discuss the term Celane Number.
- e) What is gas analysis?
- f) Draw the pneumatic ash handling system.
- g) How will you classify IC engine?
- h) Name the four reactors used in nuclear power plant.
- i) Name two thermal and two hydro power plant of India with their states.
- j) What is the significance of Feed Pumps?

**SECTION-B**

2. (a) Classify hydro plants based on :

- i. Plant capacity
- ii. Construction and operation
- iii. Head of water available.

Give the example of hydropower plant in

- (b) What is meant by cavitations? Where do they occur and how can it be avoided?

3. Describe the closed cycle gas turbine plant. What are its advantages and disadvantages?

4. Sketch and describe the followings :

- (a) Cinder Catcher
- (b) Fly Ash Scrubber

5. What is the difference between water tube and fire tube boiler? Describe the working principle of Cochran Boiler.

6. How will you classify IC engine? Describe the two stroke and four stroke cycle diesel engine. List its merits and demerits.

**SECTION-C**

7. Two boilers one with superheater and other without superheater. Applying equal quantity of steam into a common cylinder. The steam from the boiler with super heater is at 260°C. The steam in the main is 260°C. If the pressure in the main is 15 kg/cm<sup>2</sup> and the specific heat of superheated steam is 0.48 kJ/kg°C. Calculate the quality of steam supplied by the boiler.
- (b) Why economizers are essentially used in boiler furnace?

8. (a) What do you understand by paramagnetic effect? How is it used to measure  $O_2$  in the exhaust gases?
- (b) What are the different methods of measuring nuclear radiations? Explain.
9. Write short notes on :
- (a) Cyclone Burner
- (b) Solid Waste Disposal
- (c) Electrostatic Precipitator