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(Revision – 2015/19)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2025

POWER PLANT ENGINEERING

[**Note: -** Use of steam tables and mollier charts are permitted]

[Maximum Marks: **100**] [Time: **3** Hours]

PART-A

[Maximum Marks: **10**]

I. (Answer ***all*** questions in one or two sentences. Each question carries ***2*** marks)

1. Define LCV.
2. State the purpose of compounding of steam turbines.
3. State the function of steam condensers.
4. What is the principle of jet propulsion?
5. What do you mean by chain reaction? (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

II. (Answer ***any five*** of the following questions. Each question carries ***6*** marks)

1. Describe the requirements of good fuel.
2. What is boiler draught? How are they classified?
3. Describe Carnot cycle with a schematic diagram.
4. Compare jet condensers with surface condensers.
5. List the advantages and limitations of gas turbines.
6. What are the principal parts of a nuclear reactor? State the function of each.
7. Describe the working of a solar flat plate collector with sketch. (5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

(Answer ***one*** full question from each Unit. Each full question carries **15** marks)

UNIT – I

III. a. Explain the working of a Parsons reaction turbine with sketch. (8)

b. What are 3T's in combustion? Explain the role of each. (7)

OR

IV. a. Illustrate the construction of a bomb calorimeter. (8)

b. Explain pressure compounding and velocity compounding of steam turbines. (7)

UNIT – II

V. a. Illustrate the working of a parallel flow jet condenser. (8)

b. Explain Rankine cycle. (7)

OR

VI. a. Illustrate the construction and working of a condensing steam power plant. (8)

b. Explain a forced draught cooling tower. (7)

UNIT- III

VII. a. Explain the working of a diesel power plant with a block diagram. (8)

b. List the applications of gas turbines. (7)

OR

VIII. a. Explain with sketch a turbo jet engine. (8)

b. Explain the working of a closed cycle gas turbine. (7)

UNIT - IV

IX. a. Explain the function of the following in a nuclear reactor.

i) moderator ii) control rods iii) coolants iv) thermal shield. (8)

b. Describe the working of a geo thermal power plant with sketch. (7)

OR

X. a. Explain the working of a BWR with a schematic diagram. (8)

b. Describe the working of a solar cooker with neat sketch. (7)

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