

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

POWER PLANT ENGINEERING

[Maximum Marks: 75]

[Time: 3 Hours]

PART-A

I. Answer ‘all’ the following questions in one word or one sentence. Each question carries ‘one’ mark.

(9 x 1 = 9 Marks)

| | | Module Outcome | Cognitive level |
|----|--|----------------|-----------------|
| 1. | Name any hydroelectric power plant located in Kerala. | M2.01 | U |
| 2. | Interpret Octane number. | M1.04 | U |
| 3. | Determine the difference between head race and tail race in a hydroelectric power plant. | M2.01 | U |
| 4. | Identify the function of governor in diesel power plant. | M2.04 | U |
| 5. | Name a high head water turbine. | M2.02 | U |
| 6. | Highlight the moderator when nuclear fuel is uranium. | M3.04 | U |
| 7. | Identify minimum size of the reactor for a self-sustaining reaction. | M3.03 | U |
| 8. | Name the reactor in which Primary and secondary loop system is used. | M3.06 | U |
| 9. | List the basic ways of controlling thermal discharges. | M4.02 | U |

PART-B

II. Answer any ‘eight’ questions from the following. Each question carries ‘three’ marks.

(8 x 3 = 24 Marks)

| | | Module Outcome | Cognitive level |
|-----|---|----------------|-----------------|
| 1. | Define calorific value of fuel. | M1.04 | U |
| 2. | List the requirements of a good fuel. | M1.04 | U |
| 3. | Classify hydroelectric power plant according to head. | M2.02 | U |
| 4. | List the advantages of hydroelectric power plant. | M2.03 | U |
| 5. | List any three safety measures observed in oil handling system. | M4.05 | U |
| 6. | List measures to control thermal pollution | M4.01 | U |
| 7. | State the function of moderator in a nuclear reactor. | M3.04 | R |
| 8. | Express greenhouse effect. | M4.02 | U |
| 9. | Comment the methods to Prevent acid rain. | M4.02 | U |
| 10. | Identify the purpose of Control rods in nuclear reactor. | M3.04 | R |

PART-C

Answer 'all' questions from the following. Each question carries 'seven' marks.

(6 x 7 = 42 Marks)

| | | Module Outcome | Cognitive level |
|-------|---|----------------|-----------------|
| III. | List the merits and demerits of liquid fuel over solid fuels. OR | M1.04 | U |
| IV. | Explain with a neat sketch working of a diesel power plant. | M2.04 | A |
| V. | With a neat sketch explain the working of a hydro-electric power plant. OR | M2.02 | A |
| VI. | Compare liquid and gaseous fuels. | M1.04 | U |
| VII. | Describe the working of Junker's gas calorimeter with suitable sketch. OR | M1.05 | A |
| VIII. | List the advantages and disadvantages of Diesel power plant. | M2.04 | U |
| IX. | Explain nuclear fission, fusion and Chain reaction, How fission reactions are controlled in a nuclear reactor. OR | M3.02 | U |
| X. | Explain the working of Boiling water reactor with suitable sketch. | M3.06 | A |
| XI. | Write short notes on Uranium, Thorium, and Plutonium. OR | M3.05 | U |
| XII. | Explain the working of a pressurized water reactor (PWR) with a line diagram. | M3.06 | A |
| XIII. | Summarize the causes of greenhouse effect. OR | M4.01 | U |
| XIV. | Describe the safety measures followed in power plants. | M4.04 | U |
