

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024**

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.	Define a Power Plant.	M1.01	R
2.	Name the lowest temperature at which oil is capable of flowing under gravity.	M1.04	R
3.	Define the term calorific value of fuel.	M1.05	R
4.	Name the additional storage reservoir between the main storage reservoir and the powerhouse.	M2.01	R
5.	Name the process of draining steam from the turbine and using it for heating the feed water and then supplying it to the boiler.	M1.03	R
6.	Name the impact of rise or fall in temperature of a natural aquatic environment induced by human intervention.	M4.03	R
7.	Name the process by which airborne pollutants settle directly onto surfaces in the absence of moisture.	M4.02	R
8.	Name the liquid metal used as the primary coolant in the Fast Breeder Reactor.	M3.06	R
9.	Identify the effect of progressive rise in average temperature of the Earth's atmosphere because of the Greenhouse effect.	M4.02	R

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.	State the merits of gaseous fuels.	M1.04	R
2.	Explain the Reheating of the steam turbine.	M1.03	U
3.	State the essential requirement of a good fuel.	M1.04	R
4.	Discuss how the thermal pollution from power plants affect the aquatic environment.	M4.03	U
5.	Define Nuclear Power Engineering.	M3.01	R
6.	List the classification of Hydroelectric power plants on the basis of water flow regulation.	M2.02	R
7.	Explain the term fuel and its properties flashpoint and fire point.	M1.04	U
8.	Suggest some effective methods to prevent the Greenhouse effect.	M4.02	U
9.	List any three of each, Social and Economic issues of power plant.	M4.01	R
10.	Describe different sources of effluents from nuclear power plant.	M4.03	U

PART-C

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

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Explain with a sketch Junker's Gas Calorimeter to determine the calorific value of gaseous fuel.	M1.05	U
	OR		
IV.	Explain any three Liquid fuels? Also discuss the merits and demerits of liquid fuels.	M1.04	U
V.	Illustrate the working of the Boiling Water Reactor (BWR) with the help of a simple sketch.	M3.06	A
	OR		
VI.	Explain the working of a Fast Breeder Reactors (FBR) with a neat sketch.	M3.06	U
VII.	Explain the working and component details of Gas turbine power plants with a schematic diagram.	M2.05	U
	OR		
VIII.	Illustrate the working of a Hydroelectric Power Plant with a schematic Diagram.	M2.01	A
IX.	Demonstrate the workings of a nuclear reactor with a schematic diagram.	M3.03	A
	OR		
X.	Explain the function of the following in a Nuclear Power plant: (i) Control rods (ii) Moderators	M3.05	U
XI.	Interpret the general layout of Diesel Electric power plant also explain the function of each parts.	M2.04	U
	OR		
XII.	List various advantages and disadvantages of the Hydraulic power plant.	M2.03	R
XIII.	Discuss different safety practices observed in boiler operation.	M4.04	U
	OR		
XIV.	Explain the following: (i) Greenhouse effect (ii) Acid precipitation or Acid rain.	M4.02	U
