

Register No: _____

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Sixth Semester

Mechanical Engineering

CME384 - POWER PLANT ENGINEERING

Regulations - 2021

Duration : 3 Hrs

Maximum: 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Draw the P-V, H-S, and T-S diagram for Rankine cycle.	RE	1	2
2.	What is a cogeneration power plant?	RE	1	2
3.	Draw a P-V and T-S diagram for Otto cycle.	RE	2	2
4.	List any four advantages of combined cycles.	RE	2	2
5.	What is the function of a cladding in a nuclear power plant?	RE	3	2
6.	Mention the safety measures to be employed in a nuclear power plant.	RE	3	2
7.	What is the working principle of fuel cell?	RE	4	2
8.	Compare the advantages of tidal power plants over the hydel power plant.	UN	4	2
9.	Define load factor	RE	5	2
10.	Draw the load duration curve.	UN	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain with a neat sketch the working of a thermal electric power plant station and discuss the function of major components in it Or b Explain fuel and ash handling system in coal based thermal power plant with a neat sketch.	UN	1	13
12.	a Explain the working process of Diesel power plant with neat layout of all systems Or b With an aid of a block diagram, explain the working principle of a closed cycle gas turbine plant.	UN	2	13
13.	a Explain the construction and working of nuclear power plant with a layout. Or b Explain CANDU reactor with a neat sketch. Give its advantages and disadvantages.	UN	3	13

14.	a	Sketch the layout of hydroelectric power plant and explain the functions of each component in it. List the advantages and limitations of this plant.	UN	4	13
		Or			
	b	Explain the principle, construction and working of a tidal power plant with a neat sketch.	UN	4	13
15.	a	Elaborate on the various types of cost associated with power generation from a coal power plant.	UN	5	13
		Or			
	b	Explain the techniques involved in disposal of nuclear waste.	UN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a i	Distinguish between Boiling Water Reactor (BWR) and Pressurized Water Reactor (PWR).	UN	3	5
	ii	Explain the working process of PWR with a neat sketch.	UN	3	10
		Or			
	b	Using block diagram explain a typical grid-connected biogas electricity system.	UN	4	15