Reg. No.												

Question Paper Code	11614

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Fifth Semester

Electrical and Electronics Engineering

20EEEL501 - ELECTRIC ENERGY GENERATION SYSTEMS

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	Define steam rate and heat rate.	2,K1,CO1
2.	List the various modern ash handling systems.	2,K2,CO1
3.	Name the various gas power cycles.	2,K1,CO2
4.	The maximum cycle temperature of gas turbine plant much lower than that of Diesel power plant. Justify and why?	2,K1,CO2
5.	Give the requirements of chain reaction.	2,K1,CO3
6.	State the major reasons for nuclear accidents that classified under severe accidents.	2,K1,CO3
7.	List the factors to be considered in selecting turbines.	2,K1,CO4
8.	Classify power plants on the basis of traditional use.	2,K1,CO4
9.	State the importance of load curves.	2,K1,CO5
10.	List out four important factors to be considered for the selection of site for power plants.	2,K1,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Illustrate the general layout of modern coal power plant with neat diagram and explain the working of different circuits.	13,K2,CO1
		OR	
	b)	Explain the following with neat diagram :(i) Benson boiler (ii) Anyone type of cogeneration power plant.	13,K2,CO1
12.	a)	Explain the construction and working of gas turbine power plant with a layout.	13,K2,CO2
		OR	
	b)	Derive the Otto cycle and explain the processes with P-V and T-S diagrams.	13,K2,CO2

13. a) (i) Explain CANDU (Canadian-Deuterium Uranium) reactor with neat diagram also mention its merits and demerits. *8,K2,CO3*

(ii) Discuss about the safety measures adopted in modern nuclear plants. *5,K2,CO3*

OR

b) Explain the Construction and working of nuclear power plant with a layout. *13,K2,CO3*

14. a) Illustrate with a neat sketch the construction and working of a pumped storage power plant and also mention its merits and demerits. *13,K2,CO4*

OR

b) Explain the spring tides and neap tides. Discuss the different tidal power schemes and configurations with neat sketches. *13,K2,CO4*

15. a) (i) A peak load on the thermal power plant is 75 MW. The loads having maximum demands of 35 kW, 20 MW, 15 MW and 18 MW are connected to the power plant. The capacity of the plant is 90 MW and annual load factor is 0.53. Calculate the average load on power plant, energy supplied per year, demand factor and diversity factor. *8,K2,CO5*

(ii) Explain the site selection criterion of hydro power plant. *5,K2,CO5*

OR

b) Elucidate the objectives, requirements and types of Tariff. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Derive an expression for air the air standard efficiency of diesel cycle. Explain why the efficiency of Otto cycle is more than diesel cycle for the same compression ratio. *15,K2,CO2*

OR

b) Explain the construction and working of geo thermal power plant and tidal power plants. *15,K2,CO4*