A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 99709

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

Elective

Mechanical Engineering

19UME909 - Power Plant Technology

(Regulations 2019)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Economizer is used to heat..... CO1- U

   (a) Feed water (b)Air (c)Flue gages (d)all the above

2. Surge tank is for the protection of….. CO1- U

   (a) Dam (b) Spillways (c) Penstock (d)Head race

3. The equipment installed in power plants to reduce air pollution due to smoke is CO1- U

   (a) Induced draft fans (b) De-super heaters

   (c) Electrostatic precipitators (d) Re-heaters.

4. A condenser in a thermal power plant condenses steam combing out of CO1- U

   (a) Boiler (b) Super-heater (c) Economizer (d) Turbine.

5. Minimum quantity of fuel is required..... CO1- U

   (a) Thermal power plant (b) Nuclear power plant

   (c)Hydroelectric power plant (d) Diesel power plant

6. In nuclear power stations which nuclear reaction is performed? CO1- U

   (a) Nuclear fission (b) Nuclear fusion

   (c) 90% fission and 10% fusion (d) 90% fusion and 10% fission

7. The diesel plants are mainly used as _____ CO1- U

(a) Peak load plants (b)Base load plants

(c)Standby power plants (d) None of these

8. In the _____ heat transfer takes place between the exhaust gases and cool air CO1- U

(a) Intercooler (b) Re-heater (c) Regenerator (d) Compressor

9. Photovoltaic solar energy conversion system makes use of CO1- U

(a) fuel cell (b) solar cell (c) solar pond (d) None of the above.

10. Solar cells are made of CO1- U

(a) silicon (b) germanium (c)silver (d) aluminium.

PART – B (5 x 2= 10 Marks)

11. Classify the types of ash handling system? CO1- U

12. Classify about Mechanical Stokers? CO1- U

13. Explain about Nuclear Fusion CO1- U

14. Describe the effect of inter cooling in a gas turbine plant. CO1- U

15. Explain demand factor. CO1- U

PART – C (5 x 16= 80 Marks)

16. (a) Explain the layout of Steam power plant and their advantages, disadvantages, application. CO1- U (16)

Or

(b) Explain with line diagram of coal preparation in thermal power plant CO1- U (16)

17. (a) Describe the different types of over feed stokers and discuss its merits and demerits of each over others CO1- U (16)

Or

(b) What is ESP? Explain with a neat sketch and Write the advantages and disadvantages of ESP CO1- U (16)

18. (a) Explain the Construction and working of nuclear power plant with a layout. CO1- U (16)

Or

(b) Explain the working of boiling water reactor with a neat sketch CO1- U (16)

19.	(a)	How do you select engine for a diesel power plant? Draw a diesel power plant and explain its major components	CO1- U	(16)
		Or		
	(b)	Explain with a neat sketch of various arrangements of gas turbine power plant layouts.	CO1- U	(16)
20.	(a)	Explain the principle , construction and working of a wind power plant and List out the advantages and disadvantages	CO1- U	(16)
		Or		
	(b)	Explain the pollution control technologies including waste disposal options for nuclear power plant.	CO1- U	(16)