Reg. No. _____

Karunya University

(Established under Sec.3 of the UGC Act, 1956)

Model Question Paper

Subject Title: POWER PLANT ENGINEERING **Time: 3 hours**
Subject Code: 09ME237 **Maximum Marks: 100**

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. What is Reheat Rankine cycle?
2. Define thermal efficiency of Rankine cycle?
3. What is the function of condenser in steam power plant?
4. What is the function of an economizer?
5. List any two advantages of gas turbine power plants?
6. What is the function of a moderator?
7. What are the troubles caused by impurities in water?
8. What are the advantages of heating feed water?
9. What is load factor?
10. What are the main applications of geothermal energy?

PART – B (5 x 3 = 15 MARKS)

11. What are the processes that constitute Rankine cycle?
12. Describe super critical boiler.
13. What are the principal parts of a PWR reactor?
14. What are the purposes of Draft tube?
15. What are the different costs to be considered in the operation of a power plant?

[P.T.O]

PART – C (5 x 15 = 75 MARKS)

16. A simple Rankine cycle works between pressure of 30 bar and 0.04 bar, the initial condition of steam being dry saturated, calculate the cycle efficiency, work ratio and specific steam consumption. (15)

(OR)

17. Explain with neat diagram the working of a binary vapour cycle. (15)

18. What is cooling tower? How are they classified? Explain any one of them with neat sketch. (15)

(OR)

19. Give the layout of modern steam power plant and explain its features. What are its advantages and disadvantages? (15)

20. (a)Explain boiling water reactor plant with neat sketch (10)

(b) Write short notes on radiation shielding (5)

(OR)

21. With neat sketches explain the combined gas turbine and steam power plants (15)

22. Enumerate essential elements of a hydro-electric plant (15)

(OR)

23. Explain about the environmental hazards due to power plant (15)

24. Write short notes on the following

(a) Energy Auditing (8)

(b) MHD Generator (7)

(OR)

25. The maximum demand of a power station is 96000 kW and daily load curve is described as follows:

Time hours	0 - 6	6 - 8	8-12	12-14	14-18	18- 22	22- 24
Load (MW)	48	60	72	60	84	96	48

(i) Determine the load factor of power station.

(ii) What is the load factor of standby equipment rated at 30 MW that takes up all load in excess of 72 MW? Also calculate its use factor.