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 **Reg. No. :**

**Question Paper Code: 43034**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Electrical and Electronics Engineering

14UEE304 - POWER PLANT ENGINEERING

 (Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The function of a condenser is to

 (a) Reduce the back pressure at the steam turbine exhaust

(b) Increase the back pressure at the steam turbine exhaust

(c) Make the steam pressure more than atmospheric more than atmospheric pressure

(d) none of the above

2. In jet type condensers

 (a) cooling water passes through tubes and steam surrounds them

(b) steam passes through tubes and cooling water surrounds them

(c) steam and cooling water mix

(d) steam and cooling water do not mix

3. The temperature of the combustion gas at the gas turbine inlet is about

 (a) 9000C (b) 12000 C (c) 7150C (d) none of the above

4. A gas turbine works on

 (a) Otto cycle (b) Rankine cycle (c) Brayton cycle (d) Dual cycle

5. Control rods used in nuclear reactor are made up of

 (a) Steel (b) cadmium (c) copper (d) None of these

6. India’s first nuclear power plant was installed at

 (a) Tarapur (b) Kota (c) Kalpakkam (d) None of the above

7. Power co-efficient (k) for wind power is given by

 (a) K= P1/P2 (b) K= P2/P1  (c) K =P1 xP2 (d) None of the above

8. The main source of production of biogas is

 (a) Human waste  (b) Wet cow dung

 (c) Wet livestock waste (d) All of the above

9. Load factor of a power station is defined as

 (a) Average load x Maximum demand (b) Average load/ Maximum demand

 (c) Maximum demand/Average load (d) None of the above

10. The high level nuclear waste has radioactivity

 (a) Above1000 curie (b) Lies 100 to 1000 curie (c) Below 100 curie (d) Zero

PART - B (5 x 2 = 10 Marks)

11. List out the four important circuits of steam power plant.

12. List the advantages of combined cycle.

13. Distinguish between fission and fusion.

14. Why is surge tank important in hydro power plant?

15. Define flat rate tariff.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Describe the various mills used for fine pulverized coal. (8)

 (ii) Make a neat sketch of ball and race mill and explain its working. (8)

Or

 (b) Draw neat diagram of Lamont boiler and explain its working. (16)

17. (a) Name the essential components of diesel power plant and explain its operation with neat diagram. (16)

Or

(b) What are the various factors to be considered while selecting the site for gas turbine power plant? What methods are used to improve the efficiency of gas turbine? (16)

18. (a) Describe the site selection and commissioning procedure of Nuclear Power plants in our

 country. (16)

Or

(b) Explain the working of pressurized water reactor in detail. (16)

19. (a) (i) Draw a schematic diagram of a Hydro power plant and explain its operation. (12)

 (ii) Write the merits and demerits of hydro power plant. (4)

Or

 (b) Demonstrate the construction of hydro power plant with neat sketch and list the advantages and disadvantages. (16)

20. (a) Discuss the various power tariff types. Also list out its merits and demerits each tariff. (16)

Or

 (b) Explain different methods implemented for nuclear waste disposal with a necessary sketch. (16)