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

## Question Paper Code: 43304

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. Economizer is used to heat

   (a) Feed water (b) air (c) flue gases (d) none of the above

2. 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

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

   (a) $900^0$C (b) $1200^0$ C (c) $715^0$C (d) none of the above

4. Turbine converts the

   (a) Kinetic to Mechanical Energy (b) Mechanical to Electrical Energy
   (c) Mechanical to Thermal Energy (d) Thermal to Electrical

5. India's first atomic power plant located in

   (a) Kalpakkam (b) Kudankulam (c) Narora (d) Tarapur

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) $K= P_1/P_2$ (b) $K= P_2/P_1$ (c) $K =P_1 xP_2$ (d) None of the above

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

(a) $K= P_1/P_2$ (b) $K= P_2/P_1$ (c) $K =P_1 xP_2$ (d) None 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. During which season the load on a power system is minimum?

(a) Summer (b) Winter (c) Rainy (d) Autumn

PART - B (5 x 2 = 10 Marks)

11. What is the necessity of air preheater in thermal 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) Sketch the diesel cycle on p-V and T-s diagrams and derive the expression for its mean effective pressure. (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) Describe the site selection and commissioning procedure of Nuclear Power plants in our country. (16)

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

Or

(b) What is wind mill? What are various types of wind mill? Describe a horizontal axis and vertical axis wind mill. (16)

20. (a) Write an explanatory note on the site selection criteria for hydro and nuclear plants. (16)

Or

(b) (i) Discuss how the solid nuclear waste materials are disposed safely. (8)

(ii) Summarize the site selection criteria for thermal and nuclear power plant. (8)

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