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Question Paper Code: 43304

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

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) 900⁰C
 - (b) 1200⁰ C
 - (c) 715⁰C
 - (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. Control rods used in nuclear reactor are made up of
 - (a) Steel
 - (b) cadmium
 - (c) copper
 - (d) None of the above

6. The control rod in the nuclear reactor is made up of
 (a) Graphite (b) Beryllium (c) Cadmium (d) Lignite
7. Solar thermal power generation can be achieved by
 (a) using focusing collector or heliostates (b) using flat plate collectors
 (c) using a solar pond (d) any of the above system
8. The main purpose of wind vane is
 (a) to control the speed (b) to focus blades towards wind
 (c) to measure wind speed (d) to stop the blade rotation
9. In a thermal power station which of the following is not a fixed cost?
 (a) Insurance charges (b) Salary of high officials
 (c) Interest on capital cost of land buildings (d) Fuel and lubricating oil cost
10. The high level nuclear waste has radioactivity
 (a) Above 1000 curie (b) Lies 100 to 1000 curie
 (c) Below 100 curie (d) Zero

PART - B (5 x 2 = 10 Marks)

11. What are the different types of coal conveyors?
12. Define air standard efficiency of diesel cycle.
13. What is chain reaction? How it is controlled?
14. Write any four advantages of hydro power.
15. Define flat rate tariff.

PART - C (5 x 16 = 80 Marks)

16. (a) What are the harmful effects caused by using impure water in boilers? Analyze the various methods of purifying feed water. (16)
 Or
- (b) Draw neat diagram of Lamont boiler and explain its working. (16)
17. (a) 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)

Or

- (b) Discuss the working of combined cycle power plant in detail with neat sketch. (16)
18. (a) Explain the main parts of nuclear reactor in brief. (16)

Or

- (b) Describe the site selection and commissioning procedure of Nuclear Power plants in our country. (16)
19. (a) Discuss electrical and mechanical equipments of a hydro-power plant. (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) (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)

Or

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