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Question Paper Code: 41334

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

- The commercial sources of energy are
 - solar, wind and bio- mass
 - fossil fuels, hydropower and nuclear energy
 - wood, animal wastes and agriculture wastes
 - none of the above
- Economizer is used to heat
 - Feed water
 - air
 - flue gases
 - none of these
- Mechanical efficiency of a diesel engine is defined as
 - I.H.P/B.H.P
 - B.H.P/I.H.P
 - B.H.P x I.H.P
 - none of these
- Regenerative cycle thermal efficiency
 - is always greater than simple Rankine thermal efficiency
 - is greater than simple Rankine cycle thermal efficiency only when steam is bled at particular pressure
 - is same as simple Rankine cycle thermal efficiency
 - is always less than simple Rankine thermal efficiency

5. India's first nuclear power plant was installed at
(a) Tarapur (b) Kota (c) Kalpakkam (d) None of these
6. Control rods used in nuclear reactor are made up of
(a) Steel (b) cadmium (c) copper (d) None of these
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. Solar cells are made of
(a) Copper (b) Aluminum (c) Silicon (d) None of these
9. A steam power station requires space
(a) More than diesel power plant (b) Less than diesel power station
(c) Equal to diesel power station (d) None 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 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. What is known as environmental factor of power plant?

PART - C (5 x 16 = 80 Marks)

16. (a) Draw general layout of thermal power plant and explain the working of different circuits. (16)

Or

- (b) What are the harmful effects caused by using impure water in boilers? Analyze the various methods of purifying feed water. (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 various types of combined cycle power plant. (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) Explain the working of horizontal axis wind turbine with a neat sketch. Also mention its advantages and disadvantages. (16)

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

Or

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