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Question Paper Code : 53304

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Third Semester

Electrical and Electronics Engineering

15UEE304- POWER SYSTEM GENERATION

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Condensers in thermal power plants are used for condensing CO1- R
(a) steam to water (b) water to ice
(c) hydrogen gas to liquid hydrogen (d) carbon dioxide to dry ice
2. Steam pressures usually used in thermal power plants are CO1- R
(a) 5 kg/cm^2 to 10 kg/cm^2 (b) 50 kg/cm^2 to 100 kg/cm^2
(c) 110 kg/cm^2 to 170 kg/cm^2 (d) 200 kg/cm^2 to 215 kg/cm^2
3. The diesel and gas turbine units are more suited for CO2- R
(a) peak loads (b) intermediate loads
(c) base loads (d) both peak and base loads
4. The temperature of the cooling water leaving the diesel engine CO2- R
should not exceed.
(a) 25°C (b) 40°C (c) 85°C (d) 20°C
5. The function of moderator material in a nuclear reactor is CO3- R
(a) to accelerate fast neutrons (b) to slow down fast neutrons
(c) to convert fertile material into fissile material (d) to set up chain reaction
6. The nuclear energy is measured as _____ CO3- R
(a) MeV (b) MW (c) Curie (d) None of these

7. Pelton turbines are suitable for CO4- R
 (a) low heads (b) medium heads (c) high heads (d) low and medium heads
8. The current density of a photo voltaic cell ranges from CO4- R
 (a) $10 - 20 \text{ mA/cm}^2$ (b) $40 - 50 \text{ mA/cm}^2$ (c) $20 - 40 \text{ mA/cm}^2$ (d) $60 - 80 \text{ mA/cm}^2$
9. Which tariff is most ideal tariff for the consumer? CO5- R
 (a) Two part tariff (b) Three part tariff (c) four part tariff (d) None of these
10. Two part tariff is generally used for CO5- R
 (a) industrial consumers (b) residential consumers
 (c) commercial consumers (d) industrial and commercial consumers

PART – B (5 x 2= 10 Marks)

11. Name the main parts of a modern thermal plants. CO1- R
12. List the advantages of diesel electric power plants. CO2- R
13. Name some moderator materials. CO3- R
14. What is a solar cell? CO4- R
15. What is tariff? What are its objectives? CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) What considerations govern the selection of sites for steam plants? CO1-U (16)
 Explain.
- Or
- (b) (i) List the advantages and disadvantages of a thermal plant. CO1-U (10)
 (ii) Write the functions of economizer and air-preheater in thermal CO1-U (6)
 power plants.
17. (a) With diagram explain Combined Cycle Power Plants.. CO2-U (16)
 Or
- (b) Explain the essential components of gas turbine power plant and CO2-U (16)
 explain the types of gas turbine powerplant.
18. (a) With a block diagram explain the Nuclear Power Plant. CO3-U (16)
 Or
- (b) With a neat diagram explain the construction and working CO3-U (16)
 principle of Boiling Water Reactor.

19. (a) With a neat diagram explain the Geo Thermal power plant. CO4- Ana (16)
Or
- (b) (i) With a neat diagram explain any one hydraulic turbine CO4- U (8)
(ii) Explain any one solar energy collector. CO4- U (8)
20. (a) Write the general tariff form formula. Also discuss the various CO5-U (16)
tariff forms.
Or
- (b) Write short notes on the following CO5 U (16)
(i) Chronological load curve
(ii) Disposal of nuclear waste and effluent

