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Question Paper Code: 53034

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

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)

- In a regenerative cycle, feed water is heated by
 - heaters
 - drained steam from turbine
 - exhaust gases
 - All the above
- Reheat cycle in a thermal power station is employed for
 - improving thermal efficiency
 - improving condenser performance
 - reducing heat losses
 - utilizing heat of flue gases
- A gas turbine power plant is best suited for
 - base load
 - peak load
 - emergency
 - none of these
- Gas turbine power plant for maximum efficiency may have
 - heat exchangers
 - multistage compression
 - reheating
 - All the above
- Nuclear reactors usually employ
 - fission
 - fusion
 - fission and fusion
 - none of these
- Graphite is used in nuclear power plant as
 - fuel
 - coolant
 - moderator
 - electrode
- Efficiency of a solar cell is about _____ percentage.
 - 25
 - 15
 - 40
 - 60

8. The main by product of biogas plant is
 (a) biomass (b) biogas (c) organic manure (d) none of these
9. Load curve helps in deciding the
 (a) total installed capacity of the plant (b) size of the generating units
 (c) operating schedule of the generating units (d) all the above
10. Load factor of a power plant is
 (a) generally equal to unity (b) always less than unity
 (c) always more than unity (d) none of these

PART - B (5 x 2 = 10 Marks)

11. What is balanced draught?
12. Why are majority of gas turbine plants are employed as peak load plants?
13. Distinguish between fusion and fission.
14. What is the principle of operation of solar cell?
15. Name the different types of tariff.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the processes of Rankine cycle. (16)

Or

- (b) (i) List out the major advantages of high pressure boilers in modern thermal power plants. (8)
- (ii) Write a short note on natural draught. (8)

17. (a) Explain the analysis of brayton cycle. (16)

Or

- (b) (i) Write the advantages and disadvantages of diesel power plants. (8)
- (ii) Write the comparison between open and closed cycle gas turbines. (8)

18. (a) (i) What are the advantages and disadvantages of nuclear power plant? (8)
- (ii) Explain the working of boiling water reactor. (8)

Or

- (b) (i) Classify the different types of nuclear reactor. (8)

(ii) Write a short note on CANDU reactor. (8)

19. (a) (i) Write a short note on geothermal power plant. (8)

(ii) Write the classification of hydro electric plants. (8)

Or

(b) (i) Discuss the principle of operation of a fuel cell with neat sketch. (8)

(ii) Write the advantages and disadvantages of tidal power plants. (8)

20. (a) Write a short note on operating cost for

(i) hydro power plants (8)

(ii) steam power plants (8)

Or

(b) (i) What are the main considerations for selection of site for a thermal power station? (8)

(ii) What methods are used for disposal of nuclear waste material? (8)
