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Question Paper Code: 51334

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. Pulverized coal is
 - (a) coal free from ash
 - (b) non-smoking coal
 - (c) coal which burns for long time
 - (d) coal broken into fine particles

2. Which of the following contributes to the improvement of efficiency of Rankine cycle in a thermal power plant?
 - (a) reheating of steam at intermediate stage
 - (b) regeneration use of steam for heating boiler feed water
 - (c) use of high pressures
 - (d) all of the above

3. A gas turbine works on
 - (a) carnot cycle
 - (b) brayton cycle
 - (c) dual cycle
 - (d) rankine cycle

4. Which of the following is not a part of diesel engine power plant?
 - (a) cooling tower
 - (b) penstock
 - (c) oil pump
 - (d) strainer

5. Capital cost per *MWh* is highest in case of
- (a) steam power plants
 - (b) diesel engine power plants
 - (c) nuclear power plants
 - (d) hydroelectric power plants
6. In an interconnected system consisting of a nuclear power stations, steam station and diesel generating station, which plant can be used as base load plant?
- (a) steam station
 - (b) diesel generation plant
 - (c) nuclear power station
 - (d) all the above
7. Out of the following which one is not a unconventional source of energy?
- (a) tidal power
 - (b) geothermal energy
 - (c) nuclear energy
 - (d) wind power
8. Which power plant is free from environmental pollution problems?
- (a) thermal power plant
 - (b) nuclear power plant
 - (c) hydro-power plant
 - (d) geothermal energy power plant
9. A load curve is a plot of
- (a) load versus generation capacity
 - (b) load versus current
 - (c) load versus time
 - (d) load versus cost of power
10. For economy in generation power
- (a) diversity factor should be high
 - (b) plant utilization factor should be high refracted
 - (c) load factor should be high
 - (d) Load factor and diversity factor should be low

PART - B (5 x 2 = 10 Marks)

11. Define super critical boilers.
12. Mention the various process of the Brayton cycle.
13. Define the term breeder reactor.
14. What are the components of tidal power plant?
15. Define load factor of power plant.

PART - C (5 x 16 = 80 Marks)

16. (a) Explain with neat sketch the principle and operation of an Atmospheric classic Fluidized Bed Combustion (AFBC) system. (16)

Or

- (b) Draw the general layout of modern coal based thermal power plant and explain the working of different circuits. (16)

17. (a) Explain the working of combined-cycle power plant with neat sketch. (16)

Or

- (b) Draw and explain the layout of a diesel power plant in detail. (16)

18. (a) Explain the construction and working of nuclear power plant with a layout. (16)

Or

- (b) Explain the construction and working of Boiling Water Reactor (BWR) in nuclear power plant. (16)

19. (a) Sketch the layout of hydroelectric power plant and explain the functions of each component. List the advantages and limitations. (16)

Or

- (b) Explain the construction and working of tidal power plant with its advantages and disadvantages. (16)

20. (a) (i) Define tariff in power plant and explain the types of tariff. (8)

- (ii) Discuss the methods used for disposal of nuclear waste. (8)

Or

- (b) Explain the pollution control methods of coal based power plant. (16)

