Reg. No. : | | | | | | | | | | |

Question Paper Code: 31575

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

Fifth Semester

Mechanical Engineering

01UME505 – POWER PLANT TECHNOLOGY

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Appraise the necessity of surge tank.
2. State some advantages of fluidized bed boilers.
3. Define the term: In-plant handling of coal.
4. Classify draught.
5. List the types of reactors.
6. Write the uses of hydraulic prime movers.
7. State the purpose of super charger in diesel power plant.
8. Define turbo charging in combined gas turbine and diesel cycles.
9. Define load factor.
10. Classify OTEC based on location.

PART - B (5 x 16 = 80 Marks)

11. (a) Sketch the layout of diesel power plant and explain its components. (16)

Or

(b) Classify and explain various vapour power cycles in power plants. (16)

12. (a) Explain various methods of ash handling systems with neat sketch. (16)

Or

(b) Explain the pulverized coal firing systems in steam power plant with neat sketch. (16)

13. (a) Briefly discuss about the safety measures for preventing radioactive contamination of air in the location of nuclear power plant. (16)

Or

(b) List and explain the factors considered in selecting a prime-mover for hydro-electric power plant. (16)

14. (a) A diesel engine used in a diesel power plant develops 200 *H.P*. to overcome friction and delivers 1000 *BHP*. Air consumption is 90 *kg* per minute. The air fuel ratio is 15 to 1. Assess its performance by determining (i) IHP (ii) Mechanical efficiency, (iii) Specific fuel consumption. (16)

Or

(b) Discuss the working of different types of gas turbine power plant. (16)

15. (a) Sketch the layout of OTEC power plant and explain its working. (16)

Or

(b) Compare the salient points of various power plants in detail. (16)

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