

Code No: 127GP

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, December - 2019****POWER PLANT ENGINEERING****(Mechanical Engineering)****Time: 3 Hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) List the sources of energy. [2]
- b) State the properties of coal. [3]
- c) Write the types of IC engines. [2]
- d) What are the functions of lubrication system? [3]
- e) Define hydrographs. [2]
- f) Mention the components of hydroelectric power plant. [3]
- g) Write the nuclear fuel -fertile materials. [2]
- h) List the advantages of homogeneous reactor. [3]
- i) Define load duration curves. [2]
- j) Write about diversity factor. [3]

**PART – B****(50 Marks)**

2. Explain about the layout and working of steam power plant in detail. [10]  
OR
3. Describe about dust collectors and cooling towers. [10]
4. Explain principles of working of closed and open cycle gas turbines. [10]  
OR
5. Write about thermo electric and MHD generation with neat sketches? [10]
6. Classify and explain the different types of dams and spill ways. [10]  
OR
7. Describe the types of wind energy conversion techniques with neat diagrams. [10]
8. Explain the working of sodium-graphite reactor and fast breeder reactor. [10]  
OR
9. Describe about radiation hazards and shielding. [10]

- 10.a) In a 60 MW steam power station working at 40 % load factor the energy cost is found to be 5 paise /kWh. Calculate the cost of energy of the power station load factor is improved by 50 %. Due to increased energy generation the fuel cost increases the annual generation cost of 6%.
- b) Write about investment of fixed charges, operating costs and general arrangement of power distribution. [6+4]

OR

11. Explain the effluents from power plants and impact on environment. [10]

---ooOoo---

downloaded from  
StudentSuvidha.com