

Code No: 158DA

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech IV Year II Semester Examinations, July/August - 2022****BASICS OF POWER PLANT ENGINEERING****(Common to CSE, IT)****Time: 3 Hours****Max.Marks:75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) What are different methods used for collection of the dust before sending the flue gas through chimney? Explain them with suitable diagrams.
- b) Draw the layout of modern coal power plant and explain its working. [8+7]
- 2.a) Write a short note on binary cycles and cogeneration systems.
- b) Draw and explain the working of Rankine cycle. [8+7]
- 3.a) Draw the line diagram of gas turbine power plants and explain its components.
- b) Explain the closed cycle gas turbine used in the power plants. [8+7]
- 4.a) Explain in detail about integrated gasifier based combined cycle (IGCC) systems.
- b) What are the advantages, disadvantages and limitations of gas turbines? [8+7]
- 5.a) Explain the construction and working of nuclear power plant with a layout.
- b) With the help of a neat sketch, the construction working of a boiling water reactor (BWR). [8+7]
- 6.a) Describe with the help of a neat sketch, the construction working of a pressurized water reactor. What are the advantages and disadvantages?
- b) List out various safety measures to be taken in nuclear power plants. [8+7]
- 7.a) Draw the line diagram and explain the working details of hydro power plant giving salient points.
- b) How to make use of the tides for power generation based on their capacities? Explain the principle of operation. [8+7]
- 8.a) What is the impact on the environment and human health for the effluents released from the thermal power plants? Explain how to control them.
- b) Explain the significance of: i) Load factor ii) Diversity factor iii) Plant capacity factor iv) Plant use factor. [8+7]

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