

R09

Code No: 09A70302

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2013

**Power Plant Engineering
(Mechanical Engineering)**

Time: 3 Hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) Briefly discuss fuel resources and power development in India.
- b) With a neat line diagram explain the coal handling equipments used at different stages in power plant. [7+8]
2. What are the advantages and disadvantages of a pulverized coal firing? Describe "Zeolite water softening process" with a sketch. [15]
- 3.a) Explain with the help of a diagram the fuel storage and supply system of diesel power plant.
- b) Explain with the help of a sketch the water cooling system of diesel power plant. [7+8]
- 4.a) With the aid of a sketch explain the governing system of an open cycle gas turbine power plant.
- b) Give the advantages and disadvantages of closed cycle gas turbine power plant. [7+8]
- 5.a) Explain the terms catchment area, rain fall and run off.
- b) Explain the arrangement of the components of a hydroelectric power plant with a neat sketch. [7+8]
- 6.a) Explain the working of a fuel cell and give a list of fuel-cell classification.
- b) What are the advantages of solar energy and describe the working of solar flat plate collector. [7+8]
- 7.a) Explain briefly about radiation hazards and shielding in nuclear power plants.
- b) Explain the working of fast breeder reactor with a neat sketch. [7+8]
- 8.a) Write short notes on:
 - i) Load curves
 - ii) Connected load
 - iii) Demand factor
 - iv) Load factor
- b) Discuss different effluents of power plant and their impact on environment. [7+8]