

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2289455

Roll No.

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## B.TECH

Regular Theory Examination (Odd Sem-VII), 2016-17

### POWER PLANT INSTRUMENTATION

*Time : 3 Hours*

*Max. Marks : 100*

#### SECTION - A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (10×2=20)
  - a) Identify the two important use of surge tank
  - b) Classify the types of wind power plant.
  - c) List out the Advantages and disadvantages of solar power plant.
  - d) Predict the role of instruments in solar and wind power generation system.
  - e) Differentiate between Renewable and Non-Renewable energy sources
  - f) Name the three basic cycle of Thermal Power Plant.
  - g) Define the term Cogeneration.

- h) Examine the need for “Air/fuel ratio” control.
- i) Differentiate the advantage of three element control with single element control
- j) Compare liquid and solid fuel fired boilers.

**SECTION - B**

**2. Attempt any five parts from this section. (10×5=50)**

- a) Explain with a neat sketch the process of electric power generation using wind energy.
- b) What do you understand by non-conventional sources of power generation? What is the scope of these sources in India?
- c) Compare thermal and hydro power plant based on their use, size and utility.
- d) Discuss the operation of LP and HP heaters in a steam power plant.
- e) Discuss about steam temperature and pressure control in detail.
- f) Describe the working of a thermal power plant with suitable building blocks.
- g) What do you mean by solar energy conversion system? Explain the block diagram of solar PV system in detail.

- h) Explain the importance of instrumentation in nuclear power plant and survey of methods of power generation.

**SECTION - C**

**Note : Attempt any two questions from this section.**

**(2×15=30)**

- 3. a) With schematic diagram explain Hydro power plant generation.
- b) Explain coal and ash handling system in Thermal power plant.
- 4. Write notes on the following :
  - i) Three elements drum level control
  - ii) Boiler interlocks.
- 5. Examine how do you measure the air pollutants from a power plant and what are the control measures adopted to reduce the same?

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