

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

PAPER ID : 2781

Roll No.

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**B.Tech.**

(SEM. VII) ODD SEMESTER THEORY EXAMINATION 2012-13

**POWER STATION PRACTICE**

Time : 3 Hours

Total Marks : 100

Note : (1) Attempt all questions.

(2) All questions carry equal marks.

1. Attempt any **two** parts of the following : (10×2=20)
  - (a) Compare main sources of energy used for the generation of electrical energy.
  - (b) What are different factors that decide the location and site selection of hydro-electric plants ? Discuss the merits and demerits of hydro-electric plant.
  - (c) What do you mean by Kaplan & Francis turbines ? Discuss their merits and demerits.
  
2. Attempt any **two** parts of the following : (10×2=20)
  - (a) What do you mean by Nuclear Power Plant ? Discuss different types of reactors.
  - (b) Explain operational principle of gas turbine plant. Compare open and closed-cycle plants.
  - (c) What are the types of a steam turbine ? Briefly discuss about their use and characteristics.

3. Attempt any **two** parts of the following : (10×2=20)

- (a) What are different types of substations ? Discuss typical layout of a substation.
- (b) What do you mean by power factor ? What are the different causes and disadvantages of low power factor ? Explain any one method for power factor improvement.
- (c) What is objective of Tariff ? What are different forms of Tariff ? Explain.

4. Attempt any **two** parts of the following : (10×2=20)

- (a) What do you mean by economic operation of power system ? What are different characteristics of steam and hydro-plants ? Explain in detail.
- (b) What do you mean by economic load scheduling ? Explain economic load scheduling of thermal plants considering transmission losses.
- (c) Explain in detail the hydro-thermal scheduling.

5. Attempt any **two** parts of the following : (10×2=20)

- (a) What do you mean by Non-conventional energy sources ? Explain role of Private sectors in energy management.
- (b) Explain the process of conversion of solar heat to electricity. What are different solar energy collectors ? Explain future prospects of solar energy in India.
- (c) Explain generation of electricity by wind mills. What are different types of generators used in wind energy generation ? Compare them with their advantages and disadvantages.