EIC-022 **Roll No.** | | | | | | | | | | |

B.Tech.

(SEM VII) ODD SEMESTER THEORY EXAMINATION, 2015-16

POWER PLANT INSTRUMENTATION

Time: 3 Hours **Maximum Marks: 100**

Note: (i) Attempt all questions.
(ii) Marks allotted to each question are indicated on right hand side.

Q.1. Attempt any ***four*** of the following. **5x4=20**

(a) Explain how boilers are classified. Why feed water treatment is necessary before using in boilers.
(b) Write a brief note on classification of Power plants. Give their merits and demerits.
(c) What do you understand by drum level control in reference to boiler operation explain.
(d) Write a note on present energy scenario of our nation.
(e) Why interlocks are necessary for power plant safe operation? Explain.
(f) Write a note on renewable sources of energy.

Q.2. Attempt any **two** of the following. All questions carry equal marks. **10x2=20**

(a) Explain the layout of a thermal power plant using block diagram to indicate various important components.
(b) What do you understand by draught system? Explain its working.
(c) Write notes on the following: i. Types of fuels used for power generation. **ii**. Condensers.

Q.3. Attempt any **two** questions of the following **10x2=20**

(a) Discuss important points considered for site selection of Hydro Electric power plant.
(b) Explain the difference between Francis and Kaplan Turbine. What is the criterion for their selection for power generation?
(c) What is water hammer phenomenon? What is the function of Surge tank?

Q.4. Attempt any **two** questions of the following **10x2=20**

(a) Write a note on power generation through wind energy. What do you understand by Betz Limit?
(b) Explain in detail application of Solar thermal energy in power generation.
(c) Write notes on the following: i. Direct conversion of Solar energy to electricity. ii. Geothermal energy.

Q.5. Attempt any **two** questions of the following **10x2=20**

(a) Explain the working of nuclear power plant. Compare the advantages of PWR and BWR.
(b) Write a note on pollution generated by power plants and how can it be controlled.
(c) Write notes on the following: i. Electrostatic Precipitator. ii. Nuclear waste disposal.