Code: R7411005

R07

B.Tech IV Year I Semester (R07) Supplementary Examinations, May 2013

POWER PLANT INSTRUMENTATION

(Electronics and Instrumentation Engineering)

Time: 3 hours Max. Marks: 80

Answer any FIVE questions

All questions carry equal marks

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1 (a) What are the requirements of a boiler being used for a power station? How do you classify them? Explain.

(b) What are the basic resources in India for power generation? List out their capacities in different regions and explain any one of them.

2 (a) What factors are considered in selecting a site for big thermal power plants?

(b) What is the importance of thermal power plants in the national power grid and draw a general layout of a thermal power plant?

3 (a) How the instruments are classified and explain any of them with help of neat diagram?

(b) Write a short note on “solar energy”.

4 (a) Explain briefly on “co-generation”.

(b) Explain the following:

(i) Flow of feed water.

(ii) Fuel.

(iii) Air and steam.

5 (a) Define “velocity ratio”. What is the value of velocity ratio for maximum efficiency?

(b) List out the types of controls used in power plant. With help of neat diagrams, explain any two of them.

6 (a) What is the principle of temperature measurement by electrical method? With help of suitable example explain it.

(b) Briefly explain the condenser vacuum control and gland steam exhaust pressure control.

7 (a) What is the function of a super heater and explain the two arrangements of super heater in a boiler house of power plant?

(b) What constitutes the control of atmospheric pollution due to thermal power plants?

8 (a) In a fluid flow line, it is known that there occurs a pressure drop in the orifice which again in recovered downstream? How then, is the flow maintained from a low pressure to a high pressure side? Explain.

(b) Write a short note on pH meter.

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