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 *****

- 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?
- (a) How the instruments are classified and explain any of them with help of neat diagram? 3 (b) Write a short note on "solar energy".
- (a) Explain briefly on "co-generation". 4
 - (b) Explain the following:
 - (i) Flow of feed water.
 - (ii) Fuel.
 - (iii) Air and steam.
- (a) Define "velocity ratio". What is the value of velocity ratio for maximum efficiency? 5
 - (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 In a fluid flow line, it is known that there occurs a pressure drop in the orifice which again (a) 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.
