Code No: 07A7EC34 **R07** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
POWER PLANT INSTRUMENTATION
Common to Instrumentation And Control Engineering, Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are the sources of error in measurement of current using moving iron ammeter? How the errors can be compensated? [16]
2. Explain in brief about the pollution control equipments? [16]
3. Why drum level measurement is to be made? Describe in detail a method of drum level measurement. Explain how the variation of drum level influences the other parameters. [16]
4. Discuss in detail the method of monitoring Hotwell level control and Pulverizer control systems? [16]
5. What is the mode of function in generator cooling system? Discuss about various cooling systems used in a power plant? [16]
6. Explain briefly
   (a) Principle of operation of steam flow rate measurement.
   (b) Temperature sensors used in Power plants. [16]
7. What are the paramagnetic and diamagnetic gases? Give examples. Explain the principle of operation of an oxygen analyzer with a neat diagram? [16]
8. What are various arrangements for co-generation in a topping cycle? [16]

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Code No: 07A7EC34 **R07** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
POWER PLANT INSTRUMENTATION
Common to Instrumentation And Control Engineering, Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain in detail the Principle, working & constructional details of a Magnetic wind type oxygen Analyzer. [16]
2. (a) Discuss the merits and demerits of fuel analyzer used in power plants?
   (b) Explain industrial applications of chromatography? [8+8]
3. Explain in detail with neat sketches Bypass damper control system used in power plants. [16]
4. Explain in detail how steam pressure is measured in power plant. What are the sources of error and how compensation can be provided? [16]
5. Explain with necessary diagrams generation of powers in tidal mills. [16]
6. Design a Wien bridge circuit for the measurement of frequency in the range 0-1500Hz. The bridge excitation is 0-5 V A.C. sinusoidal signal. [16]
7. List out the important parameters that are monitored in various controls in power plants? [16]
8. What is the role and importance of a Generator in turbine monitoring and control with schematic representation? [16]

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Code No: 07A7EC34 **R07** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
POWER PLANT INSTRUMENTATION
Common to Instrumentation And Control Engineering, Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Discuss the following in detail:
   (a) Lubricating oil temperature control
   (b) Gland steam exhaust pressure control. [8+8]
2. Compare & contrast various types of boilers used in power plants? [16]
3. Describe with a neat diagram, the principle and working of a smoke density meter. [16]
4. Explain the differences between a thermal power plant and a Nuclear power plant. [16]
5. What is Chromatography? Differentiate between the liquid and gas chromatography with neat sketch? [16]
6. Describe with a neat sketch, constructional details and application of Paramagnetic Oxygen analyzer? [16]
7. Define the control system? Write about different control systems used in power plants with respect to their applications? [16]
8. Describe with a neat schematic, the three phase electrodynamometer power factor meter. Draw also the phasor diagram. [16]

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Code No: 07A7EC34 **R07** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
POWER PLANT INSTRUMENTATION
Common to Instrumentation And Control Engineering, Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain in brief about the pollution monitoring equipments used in power plants? [16]
2. Discuss the role of lubricating oil temperature control in power plant instrumentation? [16]
3. Explain briefly different types of Non-conventional sources of energy. [16]
4. Explain in detail with neat sketches main and reheat stream temperature control system used in power plants? [16]
5. Explain in detail various fan drives & their controls used in power plants. [16]
6. Describe the principle and working of electrodynamometer type of frequency meter with a neat sketch. [16]
7. Explain briefly
   (a) Principle of Air purge level measurement technique.
   (b) Principle and working of a smoke detector. [16]
8. Write in detail about Hydrogen purity meter with its function and applications in power plants? [16]

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