Code No: N1022/R07 **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
POWER PLANT INSTRUMENTATION
(Common to Electronics & Instrumentation Engineering and Instrumentation & Control Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Differentiate between Solar and Wind Power generation schemes. [16]
2. Write short notes on the following:
   (a) Trivector meter .
   (b) Moving coil type D' Arsonial meter. [16]
3. Explain the principle of CO monitor with a neat diagram. [16]
4. With the help of neat sketch clearly explain about furnace control systems. [16]
5. Differentiate between the Pulverizer control and Deaerator level controls? [16]
6. What is the role of pressure measurement in Gland steam exhaust pressure control with Generator cooling system? [16]
7. Explain in detail the working of Orsat flue gas analyzer? [16]
8. Discuss in detail the method of monitoring CO_2 and NO_2 present in flue gases with neat sketches? [16]

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Code No: N1022/R07 **Set No. 2**

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
POWER PLANT INSTRUMENTATION
(Common to Electronics & Instrumentation Engineering and Instrumentation & Control Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain with necessary diagrams generation of powers in tidal mills. [16]
2. Explain briefly
   (a) Heterodyne method of measuring frequency.
   (b) Wien bridge circuit for the measurement of frequency. [16]
3. Explain how the air flow rate is measured in a power plant with a relevant diagram. [16]
4. With schematic flow diagram explain Drum type Boiler. [16]
5. Describe with a neat sketch, the principle and constructional details of B.F.P re-circulation control? [16]
6. Explain in detail about the Generator cooling system in power plants? [16]
7. Describe with a neat sketch, the principle, working and constructional details of Trim type analyzer? [16]
8. Discuss in detail the method of monitoring Hydro carbons and Oxidants present in flue gases with neat sketches? [16]

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Code No: N1022/R07 **Set No. 3**

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
POWER PLANT INSTRUMENTATION
(Common to Electronics & Instrumentation Engineering and Instrumentation & Control Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the importance of instrumentation in hydroelectric power plant. [16]
2. What is a low power factor wattmeter? Explain the salient features of it with a neat diagram. [16]
3. Describe with a neat sketch the magnetic float type mechanism employed in boiler feed water control. [16]
4. What is an economizer? Is temperature measurement essential? Explain in detail how temperature measurement is made? [16]
5. Explain in detail with neat sketches Pulverizer control systems used in power plants? [16]
6. Differentiate the condenser vacuum control and Gland steam exhaust pressure control used in power plants? [16]
7. Write a short notes on:
   (a) Infrared type analyzer
   (b) Thermal conductive analyzer. [8+8]
8. List the different types of detectors used in chromatography. Explain the principle of thermionic emission type of detector with a neat schematic? [16]

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Code No: N1022/R07 **Set No. 4**

IV B.Tech I Semester Supplementary Examinations, Feb/Mar 2011
POWER PLANT INSTRUMENTATION
(Common to Electronics & Instrumentation Engineering and Instrumentation & Control Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the importance of instrumentation in hydroelectric power plant. [16]
2. Explain the principle of a basic potentiometer used for the measurement of DC voltage. What is meant by standardization? [16]
3. Describe with a neat sketch the magnetic float type mechanism employed in boiler feed water control. [16]
4. Explain in detail with neat sketches control system of main header pressure used in power plants. [16]
5. Explain the different types of pulverizers used in power plants? Discuss its merits and demerits? [16]
6. What is the role and importance of a Generator in turbine monitoring and control with schematic representation? [16]
7. Write a short notes on:
   (a) Infrared type analyzer
   (b) Thermal conductive analyzer. [8+8]
8. Define chromatography. How do you classify chromatography? Explain the principle of a gas chromatography? [16]

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