

22/11/13

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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

MINING ENGINEERING

Semester V

36

EE9361- INSTRUMENTATION ENGINEERING

(Regulation 2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Name an instrument which provides a graphical relationship between two variables.
2. Define virtual instrumentation.
3. What are the disadvantages of capacitive type pressure transducer?
4. How to measure pressure using bourdon tube and bellows?
5. List out the various types of flow meters.
6. Mention the advantages and disadvantages of Mass flow meters.
7. Classify the various techniques available to measure the viscosity of a fluid.
8. Define Dew point.
9. What are the uses of turbidity meters?
10. Mention any four types of digital voltmeters.

Part – B (5 x 16 = 80 marks)

11. Explain how seismic instruments are used in vibration measurement and ... derive the necessary equations and state the condition for stability. (16)
12. a) i. Explain the construction and working of a Cathode Ray Oscilloscope with a neat sketch. (12)
ii. Draw the block diagram of the storage oscilloscope. (4)
(OR)
- b) Discuss about the working of strip chart recorder. Mention its merits and demerits. (16)
13. a) Describe the construction details and working principle of LVDT. List out its advantages and disadvantages.(16)
(OR)

- b) Discuss about the principle of operation of McLeod gauge and Ionization gauge with neat diagram. (16)
14. a) Explain in detail about the principle of operation of various types of variable head type flow meters and compare it. (16)
(OR)
- b) Describe about the principle of operation of various types of positive displacement type flow meters. State the merits and demerits for each type. (16)
15. a) Explain about the various types of dust and smoke measurement techniques. (16)
(OR)
- b) Explain the working principle of sodium analyzer in detail with the help of the block diagram and state its significance. (16)