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Total number of pages: [1]

Total number of questions: 09

B.Tech. -CHE/ 4th Sem.

Chemical Process Instrumentation

Subject Code: BTCH-404

Batch: 2011 onwards

Time allowed: 3 Hrs

Max Marks: 60

Important Instructions:

- Section A is compulsory
- Attempt any four questions from section B
- Attempt any two questions from section C
- Assume any missing data

PART A (10x 2 marks)

Q. 1. Answer in brief:

- a) What is importance of measurement?
- b) List various expansion thermometers.
- c) What is principle of bimetallic thermometer?
- d) Define absolute pressure, vacuum and head
- e) Why recording is useful?
- f) List obstruction type flow meters.
- g) What is principle of Mass Chromatography?
- h) List three instruments to measure nuclear radiations and units.
- i) What principle is used in bubbler system to measure level?
- j) List various mechanical measurements.

PART B (4x5 marks)

Q2: Discuss different characteristics of instruments with example.

Q3: Explain Pirani gage.

Q4: Flow of liquid is approximately 10 liters per minute. Discuss area meter which can be used to measure flow.

Q5: Compare circular and strip recording charts.

Q6: Discuss measurement of PH and define it.

PART C (2x10marks)

Q7: How many ways we can measure the temperature of objects, which are far away? Which laws are applicable? Discuss one instrument.

Q8: Draw P & I diagram for reactor having cooling water coming from overhead tank on shell side and hot organic liquid flowing continuously in the tubes.

Q9: Discuss about feed forward process and feed backward control.