B.Tech. Fifth Semester (Che.Tech.(Poly) (Plast.) Tech.) (CGS)
11118 : Instrumentation & Control : 5 PP 04

P. Pages : 2   **AW - 3153**

Time : Three Hours   *0150*   Max. Marks : 80

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Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Diagrams and chemical equations should be given wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) Discuss in detail performance characteristics of an instrument.   7

    b) Explain principle construction and working of R.T.D.   7

OR

2. a) Explain the dynamic characteristics of an instrument.   7

    b) State and explain the importance of level measurement and control in various processes.   7

3. a) Describe in detail Bourdon pressure gauge.   6

    b) Discuss in detail Glass electrode in pH measurement.   7

OR

4. a) Describe the principle and working of pH meter.   6

    b) Describe mechanical and electrical hygrometer.   7

5. a) Discuss in detail (i) UV absorption spectroscopy (ii) IR absorption spectroscopy. 7

    b) Discuss the importance of composition analysis in process industry with suitable example.   6

OR

6. a) Write short note on: 7
    i)   Chromatography   ii)   Mass spectroscopy

    b) How an composition analysis is useful for failure analysis in process industry explain in detail.   6

SECTION - B

7. a) Discuss in detail application and importance of flow measurement.   7

    b) Write short note on hydraulic servomotors.   7

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OR

8.	a)	Explain pitot tube with neat sketch.	7
	b)	What do you mean by electro-hydraulic valves, explain in detail.	7
9.	a)	Write short notes on: i) Rise time ii) Settling time	6
	b)	What do you mean by block diagram? Explain importance of block diagram in process control.	7

OR

10.	a)	Derive transfer function of evaporators.	7
	b)	What do you mean by feed back control? Explain in detail with suitable example.	6
11.	a)	Explain in detail frequency response technique in process control.	7
	b)	List various types of transfer domain models.	6

OR

12.	a)	Discuss in detail:- process model. Explain any one in detail.	7
	b)	Derive transfer function of CSTR.	6

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