B.E. Sixth Semester (Production Engineering) (CGS)

10938 : Elective-II : Industrial Automation : 06 FEPE 05

P. Pages : 2 | AU - 2752

Time : Three Hours | Max. Marks : 80

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. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) Discuss importance of Automation in modern industries. **8**

b) What are various types of automation? Explain giving its relative advantages and disadvantages. **5**

OR

2. a) What do you mean by transfer line machine? Explain. **7**

b) Discuss various types of elements used in automation system. **6**

3. a) Draw typical hydraulic circuit showing its various components. **5**

b) What are accumulators? What are its various types? How is it important in hydraulic circuit? Explain working of any two types of accumulators? **8**

OR

4. a) What requirement the ideal hydraulic oil should fulfill? **6**

b) What are hydraulic servo valves? Explain its working with application. **7**

5. a) What do you mean by Air preparation? Why is it required? Explain working of Air preparation unit. **6**

b) Design fully pneumatic circuit for sequential operation of two double acting cylinders A & B for sequence "Start – A1 – B1 – B0 – A0" by using cascade method. **8**

OR

6. a) Draw symbol of **6**
i) 3/2 push button operated spring return normally closed DCV
ii) 4/2 push button operated spring return
iii) 4/3 push button operated spring centred

b) Design Hydraulic circuit for synchronization of two Double acting cylinders using hydraulic motors. **8**

SECTION – B

7.	a)	What are Transducers? What are its types? Explain any three types in detail.	6
	b)	Discuss difference between microprocessor and microcontroller.	7

OR

8.	a)	What are various kinds of inputs and outputs in PLC?	6
	b)	What factors influences the selection of PLC?	7
9.	a)	What are AGVS? What are its types? Explain.	6
	b)	What is the purpose of traffic control in AGVS? What is term blocking? What is its importance?	7

OR

10.	a)	What methods are used in commercial AGV system to permit the vehicle to decide which path to take?	8
	b)	How will you calculate requirement of number of AGVS.	5
11.	a)	What are common Robot configuration? Explain in detail with neat sketches.	8
	b)	What are interlocks in robots? What are its types? Explain.	6

OR

12.	a)	What is safety monitoring? Discuss its importance in robots?	6
	b)	What is robot programming? What are its types? Explain lead through programming in detail.	8

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