Reg. No.												

12 JAN 2023

Question Paper Code	11641

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Fifth Semester

Production Engineering

20PROE901 - LOW COST AUTOMATION

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Identify the outcomes of introducing automation in assembly lines.	*2,K2,CO1*
2.	Name the various methods of line balancing.	*2,K1,CO1*
3.	List the five levels of automation in a production plant.	*2,K1,CO2*
4.	Name the four main properties of hydraulic fluid.	*2,K1,CO2*
5.	Compare the specific features of pneumatic and hydraulic material handling systems.	*2,K2,CO3*
6.	How low cost automation will be useful for production industry?	*2,K1,CO3*
7.	Identify any two important applications of adoptive control.	*2,K2,CO4*
8.	What is a transducer?	*2,K1,CO4*
9.	What are the features of flexible automation?	*2,K1,CO5*
10.	Name the various types of feeding systems.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) What are the various situations where automation is preferred over manual labor?	*6,K2,CO1*
		(ii) Differentiate the fixed automation and programmable automation.	*7,K2,CO1*
		OR	
	b)	Briefly explain the concept of automation in an industry.	*13,K2,CO1*
12.	a)	Explain the selection procedure for hydraulic systems material handling system.	*13,K3,CO2*
		OR	
	b)	Explain the various parts of a hydraulic system with a neat sketch.	*13,K2,CO2*
13.	a)	Explain the various parts of a Pneumatic system with a neat sketch.	*13,K2,CO3*
		OR	

b) With suitable example, explain the reason for using hydraulic systems in heavy load conditions and the pneumatic systems are in faster applications. *13,K2,CO3*

14. a) Differentiate microprocessor with microcontroller and also explain the functions of 8085 microprocessor in automation. *13,K2,CO4*

OR

b) How the PLC is applicable for fluid power control? Explain with suitable example. *13,K2,CO4*

15. a) Illustrate the types and configurations of part delivery workstations using vibratory and non-vibratory devices. *13,K2,CO5*

OR

b) With suitable example, explain the working principle and constructional details of hopper feeder and rotary disc feeder. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Case study on Robotic Process Automation (RPA) in Supply Chain and Logistics. *15,K3,CO6*

OR

b) Design a circuit by cascading method for A+A-B+B-. *15,K3,CO6*