SANSKRITI UNIVERSITY	**SANSKRITI UNIVERSITY** Mathura, Uttar Pradesh	**Enrol. No:**

Semester End Examination - January 2022
Course Code: MEE 305 Course Name: Industrial Automation
School of Engineering & Information Technology

Programme: B.Tech(ME) & B.Tech+M.Tech(ME) **Semester: V**
Time: 3 hrs **Max. Marks:100**

PART - A (10 questions X 2 marks = 20 Marks)
Answer ALL the Questions

1. Attempts all parts. All parts carry equal marks. Write answer of each part in short.

a. Define Continuous Improvement. **[2]**
b. Explain the significance of automation in production systems? **[2]**
c. Define 'Shop Floor Control'? **[2]**
d. Briefly describe Personal Computers. **[2]**
e. List the different types of sensors. **[2]**
f. Define Automation. **[2]**
g. What do you understand by Internet of Things (IoT)? **[2]**
h. What are Process Control Valves? **[2]**
i. List out various hardware components used in Automation. **[2]**
j. What do you understand by a "Robot"? **[2]**

PART - B (4 questions X 5 marks = 20 Marks)
(Answer all questions)

2. Describe with a neat sketch the basic elements of an Automated System. **[5]**

3. Clearly explain how the Computers play an important role in Measurement and Control. **[5]**

4. What do you understand by a Microcontroller? How does it differ from a Microprocessor? **[5]**
5. Explain in brief the architecture of Programmable Logic Controllers along with a neat sketch. **[5]**

PART - C (3 questions X 10 marks = 30 Marks)
Answer Three out of Four Questions

6. Define Control Systems. What is the role and significance of the Open and Closed loop Control systems? **[10]**
7. What are the principles of Lean Manufacturing? List out the various seven different types of wastes involved with Lean Manufacturing. **[10]**
8. Write a brief explanation about the following systems: **[10]**

(a) IoT & AI
(b) CAMAC

9. Explain with neat diagrams the working of following sensors: **[10]**

(a) Pressure Sensor
(b) LVDT

PART - D (2 questions X 15 marks = 30 Marks)
Answer Two out of Three Questions

10. Describe in brief the basic construction of a Robot. Illustrate the different configurations of a Robot along with a neat sketch. **[15]**
11. Describe the significance of Automation. What is the basic principle on which Automation works? Describe the various strategies involved in Automation? **[15]**

12. Write detailed description of the following techniques useful in automation: **[15]**

(a) Human Machine Interface

(b) Communication system used in automation