PAPER ID-311279

Subject Code: BOE302

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM III) THEORY EXAMINATION 2023-24
AUTOMATION AND ROBOTICS

TIME: 3HRS **M.MARKS: 70**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 7 = 14**

Q no.	Question	Marks	CO
a.	Define Automation Process.	2	1
b.	Write the factors that affect the Automation.	2	1
c.	Write a short note on the degree of Freedom.	2	2
d.	Define Scope of Robotics.	2	2
e.	List the types of Sensors and their advantages.	2	3
f.	Discuss the Production System.	2	4
g.	Explain the Mining in Industrial Applications.	2	5

SECTION B

2. Attempt any *three* of the following: **7 x 3 = 21**

a.	Explain the Role of Automation in Industry 4.0 and its advantages.	7	1
b.	Write the Different Laws of Robotics and its Classifications.	7	2
c.	Define Transducer. Write the Classification of Sensors and their Application.	7	3
d.	Explain the Fundamentals of Computer Integrated Manufacturing with example.	7	4
e.	Explain the role of Automation in Entertainment and its issues.	7	5

SECTION C

3. Attempt any *one* part of the following: **7 x 1 = 7**

a.	Discuss the Open and Closed loop System in detail with a diagram.	7	1
b.	Write the Requirements of the Automation and Discuss the Classification of Automation.	7	1

4. Attempt any *one* part of the following: **7 x 1 = 7**

a.	Discuss the concept of Forward and Inverse Kinematics with example.	7	2
b.	Illustrate the Ethical Implication of Robotics and Automation with Example.	7	2

5. Attempt any *one* part of the following: **7 x 1 = 7**

a.	Define Controllers. Discuss the different classifications of Controllers in Industrial Automation.	7	3
b.	Write the Different Principles of Hard Wire Systems and discuss the types of PLCs.	7	3

6. Attempt any *one* part of the following: **7 x 1 = 7**

a.	Explain the Various Classifications of Automation in the Production System with examples.	7	4
b.	Describe the basic fundamentals of Group Technology and Flexible Manufacturing Systems in detail.	7	4

7. Attempt any *one* part of the following: **7 x 1 = 7**

a.	Discuss the Industrial applications of Automation and Robotics for Material handling in detail.	7	5
b.	Why the role of Automation in the Defense industry is a point of Discussion? Explain.	7	5