

BACHELOR OF VOCATION
Robotics and Automation
Subject: Fundamental of Robotic System
Subject Code: RA501
Semester: First
January 2021
Theory (External): 35 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number									

SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

- A. Define the applications of Robot drive mechanisms in the manufacturing industries.
- B. Define the applications of stepper motor related to industries.
- C. Define the concept of Gear transmission link related to manufacturing industries.
- D. Discuss the applications of MIG welding line in manufacturing industries.
- E. Discuss the function of the Manipulator Force Control along with applications.
- F. Discuss the working of End effectors with suitable industrial applications.
- G. Describe the working of grippers with neat diagram.
- H. Define the concept of welding torch with neat diagram.
- I. Define the applications of Robotic Gun in manufacturing industries.
- J. Define the concept of path planning with suitable example



SECTION –B (ESSAY TYPE QUESTIONS)

(5x5=25 Marks)

1. Discuss the basic concept of Robot and describe the function of its parts along with Industrial applications.
2. Describe the various drive systems for robot with neat diagram and their applications.
3. Differentiate between Flexible automation versus Robotic technology with neat diagram.
4. Differentiate between Rotations and Transformation with neat diagram along with applications.
5. Explain the construction, working and principle of servomotor with neat diagram along with Industrial applications.
6. Describe the Rotary-to-Rotary motion conversion with neat diagram.
7. Explain the working of Electronic and Pneumatic manipulators with neat diagram.
8. Explain the working of Automatic Tool changer with neat diagram along with industrial applications.

==END OF PAPER==