

BACHELOR OF VOCATION
Robotics and Automation
Subject: Industrial Robotics & Material Handling System
Subject Code: RA-602
Semester: Third
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. Differentiate between robotics and automation?
- B. Why do we use robots in the industry?
- C. Special purpose material handling equipments are used in
a) Process layout
b) Line layout
c) Both 'a' and 'b'
d) None of above
- D. In order to transport a bottle of compressed gas, use a
a) Cylinder cart
b) Hand truck
c) Wheel barrow
d) Tunnel buggy
- E. Principal of 'unit load' states that
a) Material should be moved in lots.
b) One unit should be moved at a time.
c) Both 'a' and 'b'.
d) None of the above.
- F. In arc welding the robot uses the _____ gun as a tool.
- G. What is the hazard of spray painting?
- H. Name any one advantage of industrial robot.
- I. Is it dangerous to spray paint in door?
- J. Define machine loading?

SECTION -B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

- 1) Explain industrial applications of vision controlled robotic system?
- 2) What are different types of vision sensors used in robotics? Explain any one of them with the help of neat sketch.
- 3) Write short note on:
 - i) Welding automation using robot
 - ii) Intelligence requirement of robot in glass/mirror industries.
- 4) Explain briefly the two stage control of manipulator using interpolation of end effectors position method.
- 5) Explain the working of magnet grippers used for robots.
- 6) Suggest handling equipment for a brake drum weighing 50 kg in continuous production system.
- 7) "Material handling activity is non-productive activity" criticize the statement.
- 8) What features are required for robot in spray painting?

*****END OF PAPER*****