

S.No. of a Paper : 8647

Unique Paper Code(UPC) : 61018519

Name of the Paper : **(GEC 5.3) Programming Robotics**

Name of the Course : **B. Voc. Software Development**

Semester : **V**

Duration : **3 Hours**

Maximum Marks : **50**

Instructions for Candidates:

1. Write your Roll no. on the top immediately on receipt of this question paper.
2. Question **1** is compulsory.
3. Attempt any **Four** questions from remaining part.

1 Write short note on any **five** of the following:

- a.) White line Sensor
- b.) IR Range Sensor
- c.) Accelerometer Sensor
- d.) GPS Receiver
- e.) Automatic Guided Vehicles
- f.) Parallel Robots



(2x5=10
)

- 2 Classify actuators on the basis of their principle of operation. What kind of actuators are used for heavy tasks. Explain and justify the answer. (10)
- 3 What are different sensors that have to be used in a line following robot. Write the coding program for that line following robot. (10)
- 4 Explain with the help of a suitable code LCD Interfacing with the robot. (10)
- 5 What are the different types of stepper motors? Explain the working of half stepper motor with a suitable diagram showing the half stepping sequence with both phases energized simultaneously. (10)
- 6 What are the various factors for a management to decide whether to invest on robotics installation or not? (10)