S.B. Roll. No……..

**INTRODUCTION TO ROBOTICS**
**6th Exam/ECE/4618/Jun'2022**
**(For 2018 Batch Onwards)**

**Duration: 3Hrs.** **M.Marks:75**

**SECTION-A**

**Q1. Do as directed.** **15x1=15**

a. What is a Robotics?
b. What is DC servo motor?
c. SCARA stands for_____
d. LVDT stands for_____
e. MAP stands for_____
f. The robots design with Cartesian coordinate system has _____ movements.
g. Sensor based servoing associated with_____
h. What is Stroboscope?
i. What is tachometer?
j. What is stepper motors?
k. What is mass air flow rate sensor?
l. A _____ is connection between paths or links in a robot that allow motion.
m. An automatic apparatus or device that performs functions ordinarily ascribed to humans or operates with what appears to be almost human intelligence is called_____.
n. _____ is the name for information sent from robot sensors to robot controllers.
o. The number of moveable joints in the base, the arm, and the end effectors of the robot determines_____.

**SECTION-B**

**Q2. Attempt any six questions.** **6x5=30**

i. Explain selection criteria for robot.
ii. Explain microprocessor based control system and its applications.
iii. Differentiate between mechanical and electrical/electronic instruments.
iv. Give the applications of robots.
v. Write a short note on hot wire anemometer?
vi. Explain working of thermocouple vaccum gauge.
vii. Explain the basic requirements of sensors and their functions.
viii. What are hydraulic and pneumatic drives?

**SECTION-C**

**Q3. Attempt any three questions.** **3x10=30**

a. Explain various methods of robot programming.
b. Write a short note on (**any two**)
   i) Actuators ii) Feedback devices iii) Pirani vaccume gauge
c. Explain the various types of programming languages and its applications.
d. Explain servo and non – servo control system.
e. Explain electrical method for moisture measurement.