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Roll No.....

6th Sem, Branch : Mestatronics,Mech.
CAD/CAM Design & Robotics)
Subject : ROBOTICS

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 Which one is not a type of Robot joint?

- a) L-Joint
- b) O-Joint
- c) C-Joint
- d) None of the above

Q.2 How many degree of freedom are there for Robots?

- a) 5 degree
- b) 6 degree
- c) 8 degree
- d) None of the above

Q.3 "T" joint is also called

- a) Twisting joint
- b) Linear joint
- c) Temporary Joint
- d) None of the above

Q.4 Robot is an _____ controlled manipulator.

- a) Pneumatically
- b) Hydraulically
- c) Automatically
- d) All of the above

Q.5 Which is non-industrial application of robot?

- a) Ocean exploration
- b) Defence
- c) Teaching
- d) All of the above

Q.6 A robot is a _____

- a) Programmable
- b) Multi functional manipulator
- c) Both A & B
- d) Computer operated

Q.7 Motion drives are also called as

- a) Actuators
- b) Manipulator
- c) Controllers
- d) Sensors

Q.8 A _____ is a connection between parts or links in a robot that allow motion

- a) Hinge
- b) Joint
- c) Disjoint
- d) None of the mentioned

Q.9 Non-servo robots are also called as

- a) Pick and Place
- b) Fixed stop robot
- c) Both A & B
- d) None of the mentioned

Q.10 RAIL full form is

- a) Robotic Automatic Incorporated Language
- b) Robotic Automatic independent Language

Section-B

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

Q.11 Give 3rd Law of robot?

Q.12 Two features of robot are _____, _____.

- Q.13 The closed loop control systems works based on _____ signal.
- Q.14 Servo controlled robot means _____.
- Q.15 Expand RTD.
- Q.16 The feedback is absent in _____ systems.
- Q.17 Function of gripper is _____.
- Q.18 Thermocouple is a device for sensing _____ by _____.
- Q.19 Piezo-electric sensor uses _____ as main component.
- Q.20 Encoders are used to measure.

Section-C

Note: Short answer type Questions. Attempt any twelve Questions out of fifteen Questions. ($12 \times 5 = 60$)

- Q.21 Explain degree of freedom with diagram.
- Q.22 Differentiate between servo and servo controlled system.
- Q.23 What is the need and function of robot programming?
- Q.24 What are the limitations of robot?
- Q.25 What is the selection criteria for robot?
- Q.26 Explain the method of manual teaching?
- Q.27 Explain various end-effectors.
- Q.28 Write short note on device controllers.
- Q.29 What are the adaptive control systems?

- Q.30 Draw a basic structure of robot.
- Q.31 Explain the working of any one proximity sensor?
- Q.32 Explain articulated manipulator robot.
- Q.33 Explain work cell controller.
- Q.34 Write short note on New Minimum time control.
- Q.35 Explain the application of robots in Inspection.

Section-D

- Note:** Long answer Questions. Attempt any two Questions out of three Questions. ($2 \times 10 = 20$)
- Q.36 Classify robots according to physical configurations.
- Q.37 Explain the working of LVDT with a neat diagram. Is it measure scalar or vector quantity?
- Q.38 Describe various basic elements and motion of robotic system.