

SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x 1= 10 Marks)

- A. Enlist the applications of industrial robots.
- B. What are the considerations in a material handling robotic system?
- C. What do you mean by segmentation and thresholding?
- D. What are the rules of robotics? Mention any two laws of robots.
- E. What is meant by robot anatomy?
- F. What is meant by pitch, yaw and roll?
- G. Name the three degrees of freedom associated with the arm and body motion?
- H. Differentiate between open loop and closed loop control systems used in robots.
- I. Differentiate between internal and external grippers.
- J. What are the industrial usages of trucks, monorails and rail guided vehicles?

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

1. Describe any two work envelopes of a robot with suitable diagrams and mention their applications also.
2. What are the working principle of following with their respective circuit:
(a) LVDT, (b) hall effect sensor along.
3. Classify the end effectors. Draw the mechanism used in the different grippers.
4. What are the working principle, salient features and applications of A.C. and D.C. Servo motor as robot drive system?
5. Describe the spray painting operation with robotic system with suitable diagram.
6. Explain the principle and design considerations of robotic material transfer systems.
7. Sketch and explain three degrees of freedom associated with a typical robotic wrist.
8. What is robotic vision? Explain various lighting techniques used in machine vision.

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