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**SATHYABAMA UNIVERSITY**

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E - M&P Max. Marks:80

Title of the Paper :Industrial Robotics and Expert System

Sub. Code :PRE02 (2007-08-09) Time : 3 Hours

Date :09/05/2012 Session :FN

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 PART - A (10 x 2 = 20)

 Answer ALL the Questions

1. Define work volume of a robot.

2. List the different types of joints used in robot.

3. Write down the advantage of pneumatic drive system.

4. Write short notes on vacuum grippers.

5. What are the lighting devices used in machine vision?

6. Define Segmentation.

7. List any four considerations for robot in material handling.

8. What do you understand by assembly cell design?

9. What are the various techniques used in problem solving?

10. Mention any four commands used in robot language.

PART – B (5 x 12 = 60)

Answer All the Questions

11. Discuss in detail about robot configuration.

(or)

12. Discuss about the forward and reverse transformation of a robotic arm with two degrees of freedom.

13. Write in detail about end effectors and its mechanism.

(or)

14. Discuss briefly about Mechanical Grippers.

15. Discuss in detail about proximity and range sensors.

(or)

16. Explain about machine vision system in robotics.

17. Discuss the application of robot in assembly and manufacturing.

(or)

18. With a neat sketch, explain about robot cell layout.

19. Explain various robot programming methods.

(or)

20. Discuss briefly about knowledge representation technique.