

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(ME) (2011 Onwards) (Sem.-5)**  
**INDUSTRIAL AUTOMATION AND ROBOTICS**

Subject Code : BTME-504

Paper ID : [A2131]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION - A****1. Answer briefly :**

- a. What do you understand by mechanization and automation?
- b. What do you mean by a fluid power?
- c. What is vane motor?
- d. What is quick exhaust valve?
- e. What is slip sensor in robotics?
- f. List different feeder used for job orientation.
- g. Draw the symbol of 4/2 push button spring return DC valve.
- h. Give the symbol of NAND gate with truth table.
- i. What do you mean by robot work volume?
- j. What are the main areas where robots are used?

### SECTION-B

2. Discuss the various types of cylinder mountings.
3. Explain rotary actuators.
4. Explain centrifugal hopper with neat sketch.
5. Discuss about the industrial applications of robots.
6. Discuss the various types of automation with suitable examples.

### SECTION-C

7. Compare the pneumatic, hydraulic and electric drives to power the robot.
8. Discuss the various types of Directional control valves used in pneumatic systems with neat sketch.
9. Write short notes on :
  - a. Socio economic impacts of automation.
  - b. Teach pendants.