

**R09**

**Code No: C8001**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD  
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY 2012  
APPLIED INDUSTRIAL PNEUMATICS  
(MECHATRONICS)**

**Time: 3hours**

**Max. Marks: 60**

**Answer any five questions  
All questions carry equal marks**

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- 1.a) Explain the concept of Low cost Automation in industries for increasing the Productivity.
- b) Draw the symbolic representation of Pneumatic control valves in industrial pneumatic systems describing their use.
- 2.a) Explain the working principle of rotary vane air compressor with a neat sketch.
- b) Describe the basic components of a Pneumatic system.
3. Draw and explain the circuit diagram to operate a double acting pneumatic cylinder and single acting pneumatic cylinders sequentially using a PLC.
- 4.a) Describe Pressure regulator used in pneumatic systems with a neat sketch.
- b) Explain the different types of pneumatic actuators.
5. Explain PD, PI and PID controls used in controlling the pneumatic systems and compare their characteristics.
6. Describe the Half – step stepper motor with a neat sketch.
7. Describe the various components of a PLC with a neat sketch and explain the advantages and applications of a PLC.
- 8.a) Describe the various factors considered in selecting a PLC.
- b) Describe the different types of programming methods used in operating a PLC in pneumatic systems.

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