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 values 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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