R09

Code No: C8001

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I - Semester Examinations, March 2011

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 role of fluid power in increasing the Productivity in Industries.
   (b) Draw the symbolic representation of any six pneumatic elements and explain their use in pneumatic systems. [12]

2. (a) Describe the airline installation circuit used in pneumatic system.
   (b) Write the advantages of Pneumatic system over hydraulic system. [12]

3. (a) Describe reciprocating air compressor with a neat sketch.
   (b) Explain the operation of a Full step stepper motor with a neat Sketch. [12]

4. Draw and explain the circuit diagram to operate a double acting pneumatic cylinder using 5/2 direction control valve with push button momentary switch. [12]

5. Describe the working of the FRL unit used in Pneumatic system with a neat sketch. [12]

6. (a) Differentiate between pneumatic and electro-pneumatic systems.
   (b) Explain AND, OR and NAND gates used in controlling the pneumatic systems and draw their truth table. [12]

7. Describe the architecture of a PLC with a neat sketch and explain the different types of input and output devices used in a PLC. [12]

8. (a) Explain the use of Fluid logic elements used in controlling the pneumatic systems.
   (b) Differentiate between PI and PID controls used in closed loop control systems. [12]

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