

Total No. of Questions : 8]

SEAT No. :

PE2700

[Total No. of Pages : 2

[6583]-250

T.E. (Robotics & Automation)

HYDRAULICS AND PNEUMATICS

(2019 Pattern) (Semester - V) (311502(A))

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figure to the right indicates full marks.
- 3) Neat Diagram must be drawn wherever necessary.
- 4) Assume Suitable data if necessary.
- 5) Use of Logarithmic Table, Slide rule is Electronic pocket calculator is allowed.

Q1) a) With Neat Sketch, Explain Operation of Poppet check valve and state its advantages & Disadvantages. **[8]**

b) With Neat sketch, Explain Operation of pressure and temperature of compensated FCV. **[9]**

OR

Q2) a) With Neat Sketch, explain construction and working of pilot operated pressure valve. **[8]**

b) With neat sketch Explain 4/2 DCV with any one application. **[9]**

Q3) a) With neat circuit diagram explain the control of double acting hydraulic cylinder. **[9]**

b) Explain speed control of a hydraulic motor circuit. **[9]**

OR

Q4) a) Explain the pump unloading circuit. **[9]**

b) With neat sketch explain the spring loaded accumulator. **[9]**

P.T.O.

Q5) a) Write the advantages, disadvantages and applications of pneumatic system. [9]

b) With neat sketch explain the working of FRL unit. [9]

OR

Q6) a) Draw circuit for [9]

i) Controlling speed of pneumatic double acting cylinder.

ii) Speed control of pneumatic motor.

b) Explain with neat sketch working of AND valve and with the help of circuit diagram explain any one typical application. [9]

Q7) a) Explain PLC with block diagram, also explain the ladder logic for PLC programming. [8]

b) With neat sketch explain 5/2-way single solenoid valve, spring return. [9]

OR

Q8) a) Draw and Explain the direct control of single cylinders using electro pneumatics. [8]

b) Explain an Electro-hydraulic servo system with neat sketch. [9]

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