

Total No. of Questions : 4]

SEAT No. :

P-5114

[Total No. of Pages : 2

[6187]-521

T.E. (Robotics & Automation) (Insem.)
HYDRAULICS & PNEUMATICS
(2019 Pattern) (Semester - I) (311502(A))

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4.*
- 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) State and explain governing law used in fluid power system in details.[7]

b) Explain any five desirable properties of hydraulic fluid. [8]

OR

Q2) a) Draw the general layout of hydraulic system? State the function of each component in it? [7]

b) A hydraulic press has a ram of 30 cm diameter and a plunger of 4.5 cm diameter. Find the weight lifted by the hydraulic press when the force applied at the plunger is 500 N. [8]

Q3) a) With neat Sketch, Explain Construction and working of Axial Piston Pump. [7]

b) A Pump has a displacement volume of 98.4 cm³. It delivers 0.0152 m³/s of oil at 1000 RPM and 70 bar. If the prime mover input torque is 124.3 N-m. What is the overall efficiency of pump? What is the theoretical torque required to operate the pump. [8]

OR

P.T.O.

- Q4) a)** Explain construction and working of Double acting cylinder With neat sketch. [7]
- b) A hydraulic motor receives a flow rate of 72 LPM at a pressure of 12000 kPa. If the motor speed is 800 RPM, determine the actual torque delivered by the motor assuming the efficiency 100%. [8]

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