

MEC402 :: INDUSTRIAL AUTOMATION AND ROBOTICS

Max.Marks: 50

Time Allowed: 01:30 hrs

1. This paper contains 4 questions divided in two parts.
2. All questions are compulsory.
3. The marks assigned to each question are shown at the end of each question in square brackets.
4. Attempt either (a) OR (b) from each question of Part B.
5. Answer all questions in serial order.
6. Do not write anything on the question paper except your registration number at the designated space.

PART A

Q1 (a) Where are the ports of a pressure relief valve connected?

[2.5 Marks]

(b) How many positions does a spring centered valve have?

[2.5 Marks]

PART B

Q2 (a) Draw a circuit diagram for a special punching operation using double acting cylinder as ram, which starts punching operation when safety cover is secured and operator pushes the button. Cylinder extends fast and punch a hole and returns back slowly to its initial position.

[15 Marks]

OR

(b) What is a fail safe circuit? Explain with the help of circuit diagram.

[15 Marks]

Q3 (a) Explain the basic hydraulic system with neat and clean diagram.

[15 Marks]

OR

(b) What are the advantages and disadvantages of hydraulic systems.

[15 Marks]

Q4 (a) Explain how we designate a DC valve with a suitable example. Explain working of a 3/2 direction control valve in hydraulic system with the help of circuit.

[15 Marks]

OR

(b) What do you understand by pneumatic logic valves and check valves? Discuss in detail.

[15 Marks]

Industrial Robotics Question Paper

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