Register No.: |  |

# 208

## April 2024

*Time – Three hours*
*(Maximum Marks: 100)*

*[N.B.* 1. Answer all questions under Part-A. Each question carries 3 marks.

2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

## PART – A

1. What is non Newtonian fluid? Give an example.
2. What is meant by Balanced Vane pump?
3. What is gravity return cylinder?
4. Write the specifications of gear motor.
5. Draw the hydraulic symbol for 3/2 and 4/2 DCV.
6. What is a flow divider?
7. What is the purpose of Flow meters?
8. What are vaccum pumps?
9. What is the need of timer instruction?
10. What is the purpose of ladder diagram?

[Turn over.....

PART – B

11. (a) (i) State and explain the proof of Pascal's Law. (10)
(ii) List the advantages and applications of Radial piston pump. (4)

*(Or)*

(b) Explain the working principle of Unbalanced Vane pump, rotor centered with a sketch.

12. (a) (i) Explain the working principle of Telescopic cylinder with a sketch.(7)
(ii) Explain the working principle of gear motor with a neat sketch.(7)

*(Or)*

(b) (i) Explain the working principle of rack and pinion rotary actuator with a neat sketch.(9)
(ii) Explain any three applications of rotary actuators.(5)

13. (a) Explain the working principle of pilot operated pressure relief valve –open type with a sketch.

*(Or)*

(b) (i) Explain the working principle of sequence valve with a sketch.(7)
(ii) Explain the working principle of needle valve with a sketch.(7)

14. (a) (i) Explain the construction and working principle of weight loaded Accumulator.(7)
(ii) Explain the construction and working principle of pressure intensifier.(7)

*(Or)*

(b) Draw and explain the working of counter balance circuit.

15. (a) (i) Explain various types of counter instruction in PLC.(7)
(ii) Explain various types of data handling instruction in PLC.(7)

*(Or)*

(b) Develop ladder diagram for multi cylinder application and explain the sequence of operation.

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