**652** Register No.: [ ]

# April 2019

*Time – Three hours*
*(Maximum Marks: 75)*

*[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B*

*(2) Answer division (a) or division (b) of each question in PART – C.*

*(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C. ]*

## PART – A

1. List the advantages of fluid power.
2. Define cylinder cushions.
3. Define the term intensifier ratio.
4. Define cylinder thrust.
5. Define piston rod buckling.
6. What is the purpose of muffler?
7. What is PLC?
8. What is meant by 5/2 DCV?

## PART – B

9. What is cylinder force?
10. Explain about mechanical linkages.
11. What is accumulator?
12. How braking of hydrostatic drive is done?
13. State the types of pressure losses.
14. Explain about quick exhaust valve.
15. Describe about two step speed control system.
16. What is ladder diagram?

[Turn over.....

PART – C

17. (a) (i) Explain the working of internal gear pump with a neat sketch.
(ii) Explain the working of vane motor with a neat sketch.

*(Or)*

(b) (i) Explain about cylinder mountings.
(ii) Explain about shock absorber.

18. (a) Explain the construction and working principle of pressure reducing valve with its application circuit.

*(Or)*

(b) (i) Write briefly about the mechanical –hydraulic servo valve.
(ii) Draw and explain the intensifier circuit.

19. (a) (i) Explain about the selection of direction control valve.
(ii) Explain about the selection of hydraulic pump.

*(Or)*

(b) (i) Explain about the selection of tubing and hoses.
(ii) Explain about the reservoir and its design.

20. (a) (i) Explain the working of shuttle valve with a neat sketch.
(ii) Explain with neat sketch the working of piston type air motor.

*(Or)*

(b) Explain with a circuit the working of two handed safety control system.

21. (a) (i) Write briefly about the PID and PMW functions.
(ii) Explain the criteria to select suitable PLC.

*(Or)*

(b) (i) Describe how to convert simple relay diagram into PLC relay ladder diagram.
(ii) Explain any one programming methods of PLC.

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