Register No.:

336

October 2017

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. Define fluid power.
2. Define cylinder cushioning.
3. Name the three basic types of control valves based on their function.
4. What is an accumulator?
5. What is the purpose of air filter?
6. Write the types of pressure losses.
7. What is pneumatic sensor?
8. Sketch the block diagram of PLC.

PART – B

9. List the types of positive displacement pumps.
10. Write a short note on cylinder mounting.
11. How does a simple pressure relief valve differ from compound relief valve in operation?
12. Write a short note on counter balance valve.
13. What are the factors considered for the selection of hydraulic cylinder?
14. List the various steps in matching the motor to load.
15. Write briefly about PID.
16. Compare hydraulic and pneumatic system.

PART – C

17. (a) Explain the construction and working of balanced vane pump with a neat sketch.

(Or)

(b) Describe the working of bent axis piston pump with a neat sketch.

18. (a) Explain the working principle of pilot operated check valve with a neat sketch.

(Or)

(b) With neat sketch, explain the operation of electro hydraulic servo valve.

19. (a) Explain filters and its types with sketches.

(Or)

(b) Explain (i) Selection of hydraulic cylinder (ii) Selection of flow control valve.

20. (a) Compare hydraulic, pneumatic and hydro-pneumatic system.

(Or)

(b) Explain the working principle of time delay valve with a neat sketch.

21. (a) Explain how simple ladder diagram is converted into PLC ladder diagram with example.

(Or)

(b) Explain in detail about PID and PWM function.
