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C14-M–505

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2021

DME - FIFTH SEMESTER EXAMINATION

FLUID POWER CONTROL SYSTEMS

Time : 3 hours] [*Total Marks* : 80

PART—A

4×5=20

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **four** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List any four basic components used in a hydraulic system.

2. List any four application of fluid power system.

3. Draw line diagram of second class lever system used in hydraulic cylinders.

4. List any three types of flow control valves.

5. Write three applications of flow control valves.

6. Draw any two graphical representations of accumulators used in hydraulic fluid power system.

7. Write four advantages of pneumatic systems.

8. Write any three comparisons between hydraulic and pneumatic power transmission system.

9. List at least two classifications of pneumatic cylinders.

10. Write any three functions of pneumatic circuit.

PART—B

15×4=60

Instructions : (1) Answer *any* **four** questions.

(2) Each question carries **fifteen** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain working and construction of Vane pump with a neat sketch.

12. Explain the following terms :

(a) Theoretical torque

(b) Theoretical power

(c) Theoretical flow rate related to hydraulic motors

13. Explain first and second class lever systems used with hydraulic cylinders.

14. Explain the working of 3-way directional control valve with a neat sketch.

15. Describe the operation of pressure reducing valve with a neat sketch.

16. Describe the working of double pump hydraulic circuit with a neat sketch.

17. Explain the applications of air motors.

18. Expiain the control of single-acting cylinder with AND valve.

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