



C14-M-505

4653

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2018

DME—FIFTH SEMESTER EXAMINATION

FLUID POWER CONTROL SYSTEMS

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

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

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

1. State the difference between hydraulic and pneumatic systems.
2. Write the applications of fluid power systems.
3. State the function of hydraulic cylinder in hydraulic system.
4. State the applications of flow control valves.
5. Classify the pressure control valves.
6. Differentiate between series and parallel synchronization of circuits.
7. Write the uses of (a) actuator and (b) lubricator.
8. What are the basic components of pneumatic system?
9. State the differences between single-acting and double-acting cylinders.
10. Differentiate between supply and exhaust air throttling.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the 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.** (a) State the differences between a hydraulic motor and a hydraulic pump.  
(b) Explain the following terms :  
(i) Theoretical torque  
(ii) Theoretical power  
(iii) Theoretical flow rate
- 13.** Explain first-, second- and third-class lever systems used with hydraulic cylinders.
- 14.** Explain the following :  
(a) Pilot-operated check valve  
(b) 3-way directional control valve
- 15.** Describe the operation of pressure reducing valve with a neat sketch.
- 16.** Describe the following :  
(a) Pump unloading circuit  
(b) Double pump hydraulic system
- 17.** Explain the following :  
(a) Diaphragm cylinder  
(b) Spring return single-acting cylinder
- 18.** Explain the control of single-acting cylinder with OR valve.

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