



Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, November 2017  
(2013 Scheme)  
13.706.15 : INDUSTRIAL HYDRAULICS (MP)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** the questions. **Each** question carries **2** marks.

1. Draw the Q-H curve of a centrifugal pump.
2. List the desirable properties of fluid used in a hydraulic system.
3. Define Pascal's law.
4. Name the filter elements used in a hydraulic system.
5. Write an equation for pumping power.
6. Give a classification of hydraulic activators.
7. What are mountings ? Name two mountings.
8. Name different speed control methods used in hydraulic system.
9. What is actuator locking ?
10. Draw the schematic of a ball valve.

**PART – B**

Answer **any one** question from **each** Module.

**MODULE – I**

11. What is viscosity ? Write down its unit in SI system. Explain with a neat sketch the principle and measurement of viscosity of fluid used in industrial hydraulic application. **(4+2+14)**



12. a) Write down how pumps of industrial hydraulic application are classified. 8
- b) Describe with a neat sketch the operation of a lobe pump. Draw its characteristics. Also write down the equation of power and output. (8+3+1)

## MODULE – II

13. a) Discuss the sources of dirt in a hydraulic system. 4
- b) Describe various types of filters used in hydraulic systems. 16
14. a) What are cylinders and rams. Explain the factors to be considered in the design of cylinders and rams. 15
- b) What are the desirable properties of materials of filters ? 5

## MODULE – III

15. a) What is a hydraulic motor ? With the help of a neat sketch explain the working of any one type of hydraulic motor. (2+8)
- b) Describe the calculation of piston velocity and thrust under dynamic applications. 10
16. a) Describe with the help of a neat sketch the operation of a center balance valve. 10
- b) Explain the methods of fluid temperature control in hydraulic systems. 10

## MODULE – IV

17. Describe the hydraulic circuit of a typical riveting machine. 20
18. Describe the circuit of a hydraulic press. 20
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