

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech.(Automation & Robotics) (2011 & Onward) (Sem.-5)**

# HYDRAULIC AND PNEUMATICS

**Subject Code : BTAR-501**

**Paper ID : [A2059]**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

## SECTION-A

**1. Answer briefly :**

- a. Name two different types of fire resistant hydraulic fluids.
- b. What is Reynolds number and what is its significance?
- c. What do you understand by hydraulic cylinder efficiency?
- d. What is hydrostatic transmission?
- e. What is automatic particle counter system?
- f. What is function of check valve in hydraulic circuits?
- g. What is meaning of compressibility?
- h. What are hydro pneumatic systems?
- i. Name two common problems of pneumatic systems.
- j. Write two major advantages of hydraulic system over the pneumatic system.

### SECTION-B

2. Explain construction and working of hydraulic cylinders.
3. What are the factors that should be considered for selecting the type and size of a hydraulic pump?
4. What are different types of filters used in hydraulic circuit?
5. What are different parameters for selection of hydro motors?
6. Explain cascade system of pneumatic circuit design.

### SECTION-C

7. Explain mounting and construction of common types of hydraulic reservoirs.
8. What is pneumatic circuit? Draw a pneumatic circuit diagram. What are advantages and limitations of pneumatic systems?
9. Explain and compare vane motor, gear motor and piston motor.