

Total No. of Questions : 8]

SEAT No. :

**P3544**

[Total No. of Pages : 2

**[4959] - 1229**

**B.E. (Auto) (Semester-I)**

**AUTOMOTIVE HYDRAULIC AND PNEUMATICS**

**(2012 Pattern) (Elective-II(c))**

*Time : 2 1/2 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*

**Q1) a)** Explain the different additives used in hydraulic fluids. **[8]**

**b)** Explain **[12]**

- i) Pascals law
- ii) Force-Power relation
- iii) Force-displacement relation

OR

**Q2) a)** Classify DCV's **[6]**

**b)** Explain construction and working of gear pump. **[8]**

**c)** Explain the sources of contamination and different contamination control methods. **[6]**

**Q3) a)** List the methods used for locked cylinder circuit explain any one in detail. **[8]**

**b)** Explain cylinder sequencing circuit with a commercial application. **[8]**

OR

**Q4) a)** List the methods used for speed control of a hydraulic cylinder and explain any one in detail. **[8]**

**b)** Explain cylinder synchronization circuit and it's benefits. **[8]**

**P.T.O.**

- Q5)** a) Compare Pneumatics with hydraulic power transmission. [8]  
b) Explain DCV's in Pneumatics. [8]

OR

- Q6)** a) Explain the FRL Unit. [8]  
b) List different types of compressors explain any one in detail. [8]

- Q7)** a) Explain the working of air brake system. [8]  
b) Explain hydraulic tipping mechanism. [6]  
c) Explain application areas of Pneumatics. [4]

OR

- Q8)** a) Explain the working of power steering. [8]  
b) Explain accumulator as hydraulic shock absorber [6]  
c) Explain the effects of replacing hydraulic system with pneumatic in an application with different parameters. [4]

