B.TECH. SEM -VII MECHANICAL 2014 COURSE (CBCS) : SUMMER - 2018

SUBJECT: INDUSTRIAL FLUID POWER

Day: **Thursday** Time: **02.30 PM TO 05.30 PM**
Date: **24/05/2018** **S-2018-2517** Max Marks: 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of non-programmable **CALCULATOR** is allowed.
4) Assume suitable data if necessary.

Q.1 **a)** Explain the important factors considered for selection of hydraulic fluids. **[05]**
b) What is contamination? Explain sources of contamination and its control. **[05]**

OR

Q.2 **a)** Differentiate static and dynamic seals. Sketch any two types of dynamic seals and explain their applications. **[05]**
b) State types of filters and where they are located in hydraulic system. **[05]**

Q.3 **a)** Name the important considerations when selecting a pump for a particular fluid power application. **[05]**
b) What are the functions of different parts of a typical reservoir assembly? **[05]**

OR

Q.4 **a)** Explain how accumulator is used as power saving devices and also for shock absorber devices. **[05]**
b) Draw a neat sketch and explain working of a typical axial piston pump. **[05]**

Q.5 **a)** Explain in detail the different methods to actuate direction control valves. **[05]**
b) Draw a neat sketch and explain working of a pilot operated pressure relief valves. **[05]**

OR

Q.6 **a)** Explain construction and working of sequence valve with neat sketch. **[05]**
b) Explain construction and working of solenoid operated control valves with neat sketch. **[05]**

Q.7 **a)** Sketch and explain different hydraulic cylinder mountings. **[05]**
b) Explain with neat sketch working of fail safe hydraulic circuit. **[05]**

OR

Q.8 **a)** Explain methods of control of acceleration and deceleration for actuators. **[05]**
b) Explain counter balance circuit with neat sketch. **[05]**

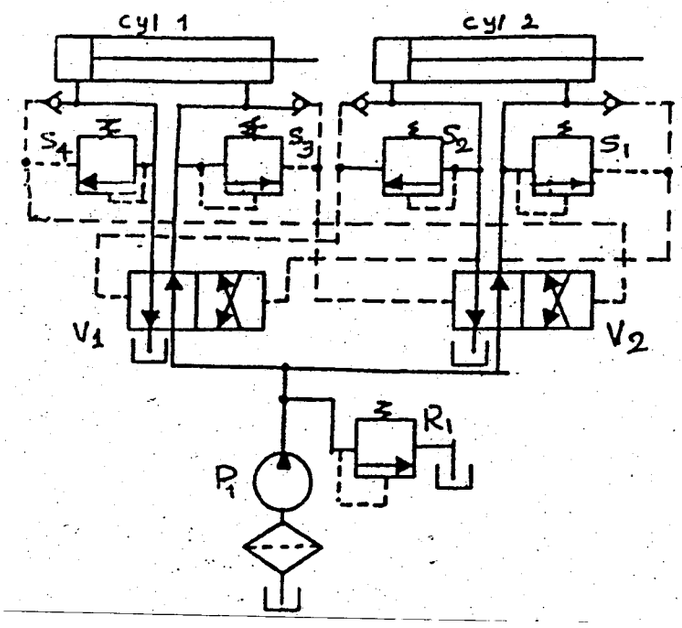
P.T.O.

Q.9 a) Draw a neat sketch of a typical regular unit used in pneumatic system. **[05]**
b) Explain application of pneumatics in Industrial automation. **[05]**

OR

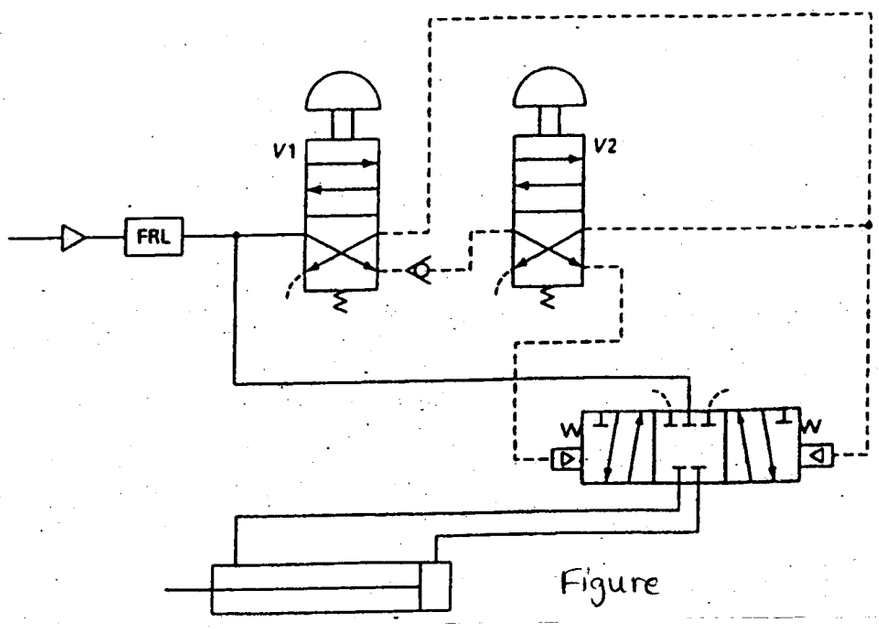
Q.10 a) Explain vacuum sensors and valves with neat sketch. **[05]**
b) Write a short on speed regulating methods used in pneumatics. **[05]**

Q.11 Redraw the circuit shown figure. Identify different components and analyze the circuit. **[10]**



OR

Q.12 Redraw and Analyze the given circuit shown in figure **[10]**



Figure