

T.Y. Diploma : Sem. VI  
[ME/MH/MI/PG/PT]  
**Industrial Fluid Power**  
Prelim Question Paper



Time: 3 Hrs.]

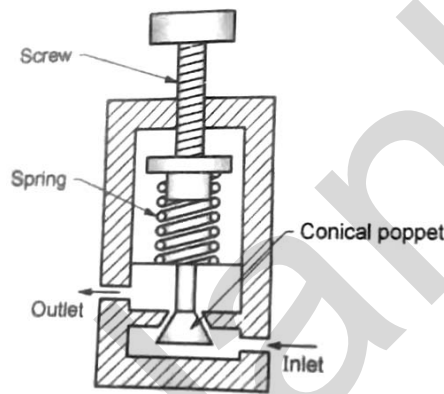
[Marks : 100

- Instructions :**
- (1) All Questions are Compulsory.
  - (2) Illustrate your answers with neat sketches wherever necessary.
  - (3) Figures to the right indicate full marks.
  - (4) Assume suitable data, if necessary.
  - (5) Mobile Phone, Page and any other Electronic Communication devices are not permissible in Examination Hall.

1. (a) Attempt any **THREE** of the following: [12]
- (i) Describe essential properties of oils used in oil hydraulic circuits. (Any eight)
  - (ii) Draw symbols of :
    - (1) Unidirectional hydraulic pump
    - (2) Pilot operated check valve
    - (3) Sequence valve
    - (4) Heater
  - (iii) Explain construction and working principle of Internal Gear pump.
  - (iv) Draw sketch of needle valve and explain its working.
- (b) Attempt any **ONE** of the following : [6]
- (i) Explain the working of axial piston pump with neat sketch?
  - (ii) With neat Sketch describe pressure compensated flow control valve? Also show the symbol of the same?
2. Attempt any **TWO** of the following : [16]
- (a) Explain with neat sketch the working of hydraulic circuit for shaping machine.
  - (b) State the functions of pressure relief valve for pneumatic system. Explain its working with neat sketch.
  - (c) What is hose? Enlist factors affecting on selection of hose in hydraulic system. State different layers of hose.
3. Attempt any **FOUR** of the following : [16]
- (a) State advantages and disadvantages of poppet type directional control valve.
  - (b) What are the various materials used for pipes in hydraulic circuit?
  - (c) Explain with neat sketch the working and applications of meter-in hydraulic circuit.
  - (d) Enlist any four applications of oil hydraulic system.
  - (e) What is FRL? State its importance.
4. (a) Attempt any **THREE** of the following : [12]
- (i) What is the use of direction control valve? Explain with sketch.
  - (ii) Draw bleed off circuit and label it.
  - (iii) What are the limitations of pneumatic system?
  - (iv) Draw symbol of :
    - (1) 2 × 2 DC valve
    - (2) Fixed type flow control valve
    - (3) Pressured relief valve
    - (4) Muffler
- (b) Attempt any **ONE** of the following : [6]
- (i) What is the meaning of unidirectional air motor and bi directional air motor? Explain with sketch and draw symbol of both.
  - (ii) Compare linear actuators and rotary actuators.

5. Attempt any **TWO** of the following : [16]
- What is function of filter? How filters are classified? Name any four advantage of bypass filter?
  - Sketch the two positions of sliding spool type 3/2 DCV and explain in brief?
  - Develop a pneumatic circuit for operation of two DAC such that one operator after another.

6. Attempt any **FOUR** of the following : [16]
- Describe with neat sketch the construction and function's of pneumatic hose?
  - State the application of Pneumatic System?
  - Distinguish between pressure relief valve and unloading valve?
  - For the given component answer the following questions
    - Write the name of shown component
    - Name the parts denoted by around
    - Give it's application
    - Draw the symbol.



- (e) Draw a Sequencing Circuit for two DAC. Stamping Circuit.

Paper Discussion Schedule for T.Y. Diploma Sem.VI

Date	Day	Timing	Centre
9 April 2017	Sunday	9 a.m. to 11 a.m.	Dadar, Nerul
9 April 2017	Sunday	12 p.m.to 2 p.m.	Thane

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