17552

21819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Figures to the right indicate full marks.

(3) Assume suitable data, if necessary.

Marks

1. (A) Attempt any THREE of the following : **12**

(a) State four properties of fluid with unit.

(b) Draw a neat labelled sketch of Relief valve and label it. Also draw a symbol of it.

(c) Write the working of gate type flow control valve with suitable sketch.

(d) Draw a neat labelled sketch of axial piston pump.

(B) Attempt any ONE of the following : **6**

(a) Define :

(i) Laminar flow

(ii) Turbulent flow

State one example of each.

(b) Draw a neat sketch of globe type flow control valve and explain its construction and working.

2. Attempt any FOUR of the following : **16**

(a) State Bernoulli's theorem and list its applications.

(b) Write four advantages of hydraulics.

(c) Draw a symbol of :

(i) Single acting cylinder

(ii) 2 × 2 DC valve

(d) State the function of seal. List its types.

(e) Describe the importance of pipe fitting.

3. Attempt any FOUR of the following : **16**

(a) Write the function of filter and list its types.

(b) Draw a neat lebelled sketch of accumulator and state its use.

(c) Draw a neat sketch of sequence valve and state function of it.

(d) Explain working of Vane pump (balanced type) with neat sketch.

(e) Draw a neat sketch of Gear type Hydraulic motor and explain its working.

4. (A) Attempt any THREE of the following : **12**

(a) Explain working of 3 × 2 DC valve with neat sketch.

(b) Explain the meaning of 'Characteristics curve of a pump' & State its significance.

(c) Draw a neat sketch of piston type Hydraulic motor and explain its working.

(d) Draw a neat sketch of FRC unit and state its functions.

(B) Attempt any ONE of the following : **6**

(a) Draw a neat sketch of counter-balance valve and explain its working.

(b) List types of air motor and draw a labelled sketch of any one.

5. Attempt any TWO of the following : **16**

(a) Draw a basic pneumatic circuit used in blow moulding m/c and explain its construction and working.

(b) Explain with neat sketch construction and working of swash plate type radial piston pump.

(c) List the safety requirements in pneumatic system.

6. Attempt any TWO of the following : **16**

(a) (i) State Pascal's law and write its assumptions. **4**

(ii) Explain the term 'conservation of energy'. **2**

(iii) Hydraulic leverage. **2**

(b) Explain Flexible hose and its applications.

(c) Explain construction and working of external gear pump with suitable sketch.
