22650

23124

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) Define specific weight and viscosity.

b) State Pascal's law.

c) Classify Pressure Gauges.

d) Draw the symbols for

i) Double acting hydraulic cylinder

ii) Telescopic hydraulic cylinder

e) Enlist the valves used for pneumatic system.

f) List two application of hydraulic circuit used in Automobile.

g) List two application of Pneumatic System.

Marks

2. Attempt any THREE of the following : **12**

a) State application of Bernoulli's theorem in Venturimeter to measure the Discharge.

b) Classify fluids flows with one example of each.

c) The centrifugal pump fails to start pumping. State any four causes and remedies for the same.

d) Explain with neat sketch construction and working of centrifugal pump.

3. Attempt any THREE of the following : **12**

a) Define the hydraulic coefficients Cc, Cv, Cd, Cr and state the relation between these hydraulic coefficients.

b) Explain construction and working of hydraulic lift with neat sketch.

c) Draw the labelled sketch of Swash plate type pump.

d) Differentiate between gear pump and vane pump on the basis of –

i) Construction

ii) Pressure

iii) Speed and

iv) Application

4. Attempt any THREE of the following : **12**

a) Draw a neat sketch of Gear type air motor. State it's two Applications.

b) Differentiate between spool and poppet type valves (Minimum Four points)

c) Explain construction and working of pressure control valve with neat sketch.

d) Draw a labelled sketch of sequence valve and describe its working.

e) State types of pneumatic actuator's and state applications of each.

Marks

5. Attempt any TWO of the following : **12**

a) Explain principle, construction and working of double acting Reciprocating pump with neat sketch.

b) Describe seals and gaskets with their function, types and material used in automobile applications.

c) Explain hose and connectors used in braking system of a truck.

6. Attempt any TWO of the following : **12**

a) Explain with sketch the Hydraulic milling machine.

b) A mild steel block holds the machine and then drill the hole the block is released when drill goes back. Suggest and draw the suitable circuit for this situation.

c) Draw and explain pneumatic meter in circuit to control of speed of actuator.
