17522

21718

3 Hours / 100 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

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

(i) Define surface tension and viscosity with their unit

(ii) Explain working of Bourdon tube pressure gauge with neat sketch.

(iii) What is priming. State the need of priming?

(iv) Explain working of vane pump with neat sketch.

b) **Attempt any ONE of the following:** **6**

(i) Describe the concept of atmospheric pressure, gauge pressure, vacuum pressure, absolute pressure and relation between them with a neat sketch.

(ii) Explain construction and working of Hydraulic Ram with neat sketch.

Marks

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

a) State the law of continuity and write any two application of it.

b) Explain cavitation and reasons for cavitation in pumps.

c) Explain working of internal gear pump with neat sketch.

d) Explain construction and working of 4/2 DC valve used in Hydraulic system.

e) Explain hydraulic gear motor with neat sketch.

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

a) Describe working of centrifugal pump with neat sketch.

b) Explain hydraulic Jack with neat sketch.

c) Explain Hydraulic telescopic cylinder with neat sketch.

d) Explain piston type air motor with neat sketch.

e) State the function of filter and strainer.

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

(i) Describe net positive suction head with suitable sketch.

(ii) Explain construction and working of Non-return valve with neat sketch.

(iii) Explain full flow filter with neat sketch.

(iv) Explain FRL unit with its symbol and application.

(v) Draw the symbols for:

1) Directly operated pressure relief valve

2) 4/3 D.C. valve

3) Spring Loaded Accumulator

4) Pressure switch.

Marks

b) **Attempt any ONE of the following:** **6**

(i) Explain construction and working of sequencing valve with neat sketch.

(ii) Describe seals and gasket with their function, types and material used.

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

a) Derive an expression of discharge through venturimeter.

b) Compare reciprocating pump and centrifugal pump any eight points.

c) Explain construction and working of Hydraulic circuit for power steering system.

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

a) (i) Explain the concept of vena contracta with neat sketch.

(ii) Define all Hydraulic co-efficient.

b) Explain construction and working of Hydraulic circuit for milling machine.

c) (i) Compare Hydraulic circuit and pneumatics circuit. Any four points.

(ii) Explain principle and application of electro hydraulic system.