17552

21415

3 Hours/100 Marks

Seat No. | | | | | | | | |

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, Pager and ***any other*** *Electronic Communication devices are* ***not*** *permissible in* ***Examination Hall****.*

MARKS

1. A) Attempt **any three** of the following : **12**
   a) State Bernoulli's Theorem and write its two application.
   b) Explain with neat sketch working of sequence valve.
   c) Explain hydraulic accumulator with neat sketch.
   d) Classify various types of pumps.

   B) Attempt **any one** of the following : **6**
   a) Explain the different properties of fluid.
   b) Draw a neat sketch of pressure relief value. Explain its working in brief.

2. Attempt **any four** of the following : **16**
   a) Compare laminar and turbulent flow.
   b) State Pascal law. Explain how Pascal law is used in power hydraulics.
   c) Draw the symbols for :
      i) Double acting cylinder
      ii) Filter
      iii) 4/3 directional control valve
      iv) Variable speed uni directional pump.
   d) State the type of seals. Name the four type of materials used for seal.
   e) Explain with neat sketch hydraulic reservoir and write its function.

P.T.O.

MARKS

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

   a) Explain working of full flow filter with neat sketch.

   b) With a neat sketch explain hydraulic intensifier. State its use.

   c) Explain with neat sketch flow control globe valve.

   d) Explain working of gear pump with sketch.

   e) Explain with neat sketch working of vane type hydraulic motor.

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

   a) With neat sketch explain check valve.

   b) What do you understand by characteristic curve of a pump ? State its significance.

   c) Explain working of vane pump with neat sketch.

   d) State safety precautions in pneumatics.

   B) Attempt **any one** of the following : **6**

   a) Explain with neat sketch shuttle valve.

   b) List types of Air motors and draw labelled sketch of any one.

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

   a) Draw any one hydraulic circuit and explain its components. Write application of this circuit.

   b) Explain with neat sketch construction and working of swash plate type axial Piston pump.

   c) i) Write advantages and disadvantages of Air Compressor.

   ii) Draw a neat sketch of FRL unit.

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

   a) i) Write four advantages of hydraulics.

   ii) Explain Hydraulic drives.

   b) Explain with neat sketch pneumatic circuit used in blow moulding machine.

   c) i) Explain flexible hose and its applications.

   ii) Explain what is positive displacement pump ? Where it is useful ?
