



17552

15162

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are **compulsory**.*
 - (2) *Illustrate your answers with neat sketches **wherever** necessary.*
 - (3) *Figures to the **right** indicate **full** marks.*
 - (4) *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 applications.
 - b) Explain with neat sketch working of shuttle valve.
 - c) Explain hydraulic intensifier with neat sketch and function.
 - d) Draw a neat labelled sketch of vane pump and explain its working.
- B) Attempt **any one**. **6**
- a) List four applications of hydraulics (any four).
 - b) Explain working of sequence valve with its neat sketch.
2. Attempt **any four** of the following : **16**
- a) List types of fluid flow and define any two of them.
 - b) Explain hydraulic leverage.
 - c) Describe construction and working of 4/3 direction control valve.
 - d) List types of seal and write function of it.
 - e) Describe maintenance of pipe fittings in hydraulic system with precautions to be taken.
3. Attempt **any four** of the following : **16**
- a) Explain working of proportional filter with neat sketch.
 - b) With neat sketch and symbol explain counter-balance valve.
 - c) Draw construction (working) diagram of gate type of flow control valve and write its working.
 - d) With neat sketch explain swash-plate type pump.
 - e) Compare balance and unbalanced vane pump (any four points).

P.T.O.



Marks
12

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

- a) Explain Globe valve with neat sketch.
- b) Draw a neat sketch of unbalance vane pump.
- c) Explain working of internal gear pump with neat sketch.
- d) List the types of air compressor and explain working of any one.

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

6

- a) Explain with neat sketch gate valve.
- b) Explain working and function of each element of FRL unit and draw composite and combined symbol of FRL unit.

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

16

- a) Draw any one hydraulic circuit and explain its components. Write applications of that circuit.
- b) Explain with neat sketch construction, working and application of piston motor.
- c) i) Classify pneumatic actuator and write function of it.
ii) Explain proximity switch.

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

16

- a) i) What are hydraulic circuit elements ?
ii) How power is transmitted through hydraulics ?
 - b) Explain pneumatic circuit used in blow moulding machine along with its sketch.
 - c) i) Classify hydraulic pumps and give one application of each.
ii) Explain flexible hose and its applications.
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