Register No.: [ ]

218

April 2023

Time – Three hours
(Maximum Marks: 100)

N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.
2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.

PART – A

1. Define Kinematic Viscosity and state its unit.
2. State Pascal's law.
3. Write the applications of Bernoulli's theorem.
4. Define total energy line.
5. Write the functions of surge tank.
6. What are the different types of casing?
7. Draw the general layout of pneumatic systems.
8. List the types of pumps.
9. What are the functions of pressure regulator?
10. What are functions of flow control valve?

PART – B

11. (a) Explain the construction and working of Hydraulic Jack with neat sketch.

(Or)

(b) A differential manometer connected to two points A and B in a horizontal pipe line containing an oil of relative density 0.8 and difference in mercury level is 125 mm. Determine the difference in pressure between the two points in terms of (i) m of water, (ii) kN/m^2 absolute.

12. (a) Derive an expression for the discharge through a venturimeter.

(Or)

(b) (i) Using Chezy's formula find the loss of head due to friction in a pipe 80 mm diameter and length of 35 m. The velocity of flow is 2 m/sec. Take Chezy's constant C = 100. (7)

(ii) Calculate the head lost due to friction in a pipe of 600 mm diameter and 1.5 km long. The velocity of flow of water is 2.5 m/s and the friction factor is 0.02. (7)

13. (a) List out the types of centrifugal pump casing and explain any two types with neat sketch.

(Or)

(b) Explain the construction and working principle of Pelton wheel with neat sketch.

14. (a) Explain construction and working of hydraulic pressure reducing valve with neat sketch.

(Or)

(b) Explain the working of hydraulic circuit for milling machine with neat sketch.

15. (a) Explain construction and working of pressure relief valve with neat sketch.

(Or)

(b) Explain the function of double acting cylinder with metering in control with neat sketch.
