

No. of Printed Pages : 4
Roll No.

221743

4th Sem./ Mechanical, Mech (Tool & Die)
Subject : Hydraulics and Pneumatics

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which hydraulic device is similar to flywheel in function?

- a) Hydraulic ram
- b) Hydraulic accumulator
- c) Hydraulic jack
- d) Hydraulic coupling

Q.2 Mercury does not wet the glass tube, due to the _____ property

- a) Adhesion
- b) Cohesion
- c) Viscosity
- d) Atmospheric pressure

Q.3 Hydraulic gradient line always lies

- a) Below the total energy line
- b) Above the total energy line
- c) Parallel to bottom
- d) None of the above

Q.4 Rain drops become spherical due to

- a) Surface tension
- b) Air resistance
- c) Viscosity
- d) Atmospheric pressure

Q.5 Hydraulic lift is based on the _____ principle.

- a) Bernoulli's Principle
- b) Pascal's law
- c) Boyles Law
- d) Archimedes Principle

Q.6 The velocity at which the flow changes from laminar to turbulent is called _____

- a) Supersonic velocity
- b) Escape velocity
- c) Critical velocity
- d) None of the above

(1)

221743

(2)

221743

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define capillarity.

Q.8 What is cavitation.

Q.9 The function of impeller is _____.

Q.10 Define Hydraulic Gradient Line.

Q.11 Vacuum Pressure is also known as _____.

Q.12 Density = _____

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain Pascal's Law and give its one application.

Q.14 Write short note on working of piezometer.

Q.15 What is continuity equation? Derive the equation.

Q.16 Explain any 4 minor losses in flow in pipes.

Q.17 Define Reynold's number and give its significant effects.

Q.18 Explain the working principle of Kaplan Turbine.

Q.19 Give the function and types of air cylinder.

Q.20 Explain multistage pump with diagram and the need of it.

Q.21 If 15 litres of petrol has a weight of 10.5N, find its specific weight, mass density and specific gravity.

Q.22 Give the limitations of Bernoulli's theorem.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the principle and working of venturimeter with a neat diagram.

Q.24 Explain the construction and working of Hydraulic Ram.

Q.25 Briefly explain the common faults and remedies of hydraulic and pneumatic systems.