Date: 2-12-2024

LGS GROUP OF COLLEGES

Physics | Monthly Test | XI

TEST# MT-2

Topic: Chapter # 6	Name:……	Roll No:
Time: 1 hr.	Objective	Marks =35

SECTION-I OBJECTIVE TYPE

Note: Four possible answer A, B, C and D to each question are given. The choice which you think is correct, fill the circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question. (1 × 11 = 11)

Q1. Select the right option.

1) ρAv= ……rate flow
   (A) mass (B) volume
   (C) density (D) pressure

2) If the radius of droplet becomes half, then its terminal velocity will be:
   (A) Double (B) Half
   (C) One fourth (D) Four time

3) The fluid is said to be incompressible, if its density is:
   (A) Zero (B) Very high
   (C) Very small (D) Constant

4) Pressure of a fluid is equal to energy per unit :
   (A) mass (B) volume
   (C) density (D) time

5) If the temperature of indoor swimming pool increases, what will be the effect on co efficient of viscosity η of water and air ?
   (A) η of water and air both will increase (B) η of water and air both will decrease
   (C) η of water will decrease while that air will increase
   (D) η of water will increase while that air will decrease

6) A similar fluid flowing through the two pipes of diameters d_1 and d_2 then v_1: v_2 = -------.
   (A) d_1/d_2 (B) d^2_1/d_2^2
   (C) d_2/d_1 (D) d_2^2/d^2_1

7) A 2m tall cylinder full of water has four identical small holes at heights 1.8m, 1.2m, 0.6 and 0.3m. The speed of efflux is maximum from:
   (A) 1.2 m high hole (B) 1.8 m high hole
   (C) 0.6 m high hole (D) 0.3 m high hole

8) Water is projected from two pipes A and B with same speed at angles 30^0 and 60^0 respectively. Which of the followings is correct according to the Fluid Dynamics?
   (A) water from pipe A will fall at larger horizontal distance
   (B) water from pipe B will fall at larger horizontal distance
   (C) water from both pipes will fall at same horizontal distance
   (D) Fall of water cannot be predicted

9) Which material has maximum viscosity?
   (A) Glycerin (B) Plasma
   (C) Ethonal (D) Water

10) The law of conservation of energy is the basis of:
   (A) Stream line flow (B) Equation of continuity
   (C) Bernoulli's equation (D) Venture relation

11) Speed of Efflux is v when fluid flows from height h, what will be the speed of Efflux if height is doubled.
   (A) v (B) 2v
   (C) $\sqrt{2}$ v (D) v/2

Date: 2-12-2024

LGS GROUP OF COLLEGES

Physics (Ch # 6) Monthly Test XI

TEST# MT-2

SECTION-II SUBJECTIVE TYPE

Q2. Write short answers of the following questions. (8 x 2 = 16)

i) Explain what do you understand by the term viscosity?

ii) Why fog droplet appears to be suspended in air?

iii) Two row boats moving parallel in the same direction are pulled towards each other. Explain?

iv) Draw graph to show systolic and diastolic pressure, also show the period of heart beat on graph.

v) Why the tarpaulin over the cargo truck bulges out when truck is moving but remains flat when truck is at rest?

vi) Why a ski jumper curves his body during the jump?

vii) As one climbs up a mountain, why his ears pop?

viii) Why does the stream of water from a faucet become narrow as it falls?

SECTION – II (PART–II)

Note: Attempt one questions. **(5+3=8)**

Q3. a) What is BERNOULLI'S EQUATION? Derive it for a fluid having density ρ, pressure P, moving with the speed v at altitude h.

b) Water flows down hill through a closed vertical funnel. The flow speed at the top is 12.0cms^{-1}. The flow speed at the bottom is twice the speed at the top. If the funnel is 40cm long and the pressure at the top is 1.013×10^5Nm^{-2}, what is the pressure at the bottom?