Physics Model Question Paper 8: (For Class 11 and 12 and Pre-Medical/Engineering Entrance)

Question 1 : The ratio of minimum wavelengths of Lyman and Balmer series will be

(A) 1.25

(B) 0.25

(C) 5

(D) 10

Answer : (B)

Question 2 : The ratio of the nuclear radii of elements with mass numbers 216 and 125 is

(A) 216:125

(B) $\sqrt{216} : \sqrt{125}$

(C) 6 :5

(D) none of these

Answer : (C)

Question 3 : The spectrum of an oil flame is an example for _____.

(A) line absorption spectrum

(B) band emission spectrum

(C) line emission spectrum

(D) continuous emission spectrum

Answer : (D)

Question 4 : The temperature of a gas contained in a closed vessel of constant volume increases by 1°C when the pressure of the gas is increased by 1%. The initial temperature of the gas is _____.

(A) 100°C

(B) 200 K

(C) 100 K

(D) 273°C

Answer : (C)

Question 5 : The terminals of a 18 V battery with an internal resistance of 24 W are connected to a circular wire of resistance 24 W at two points distant at one quarter of the circumference of a circular wire. The current through the bigger arc of the circle will be

(A) 0.75 A

(B) 1.5 A

(C) 2.25 A

(D) 3 A

Answer : (A)

Question 6 : The wavelength of the light used in Young's double slit experiment is I. The intensity at a point on the screen where the path difference is $\dfrac{\lambda}{6}$ is I. If I_0 denotes the maximum intensity, then the ratio of I and I_0 is _____.

(A) 0.707

(B) 0.75

(C) 0.866

(D) 0.5

Answer : (B)

Question 7 : There is a uniform magnetic field directed perpendicular and into the plane of the paper. An irregular shaped conducting loop is slowly changing into a circular loop in the plane of the paper. Then _____.

(A) AC is induced in the loop.

(B) no current is induced in the loop.

(C) current is induced in the loop in the anti-clockwise direction.

(D) current is induced in the loop in the clockwise direction.

Answer : (C)

Question 8 : Three liquids of equal masses are taken in three identical cubical vessels A, B and C. Their densities are P_A, P_B and P_C respectively. But $P_A < P_B < P_C$. The force exerted by the liquid on the base of the cubical vessel is _____

(A) the same in all the vessels

(B) maximum in vessel A

(C) maximum in vessel C

(D) minimum in vessel C

Answer : (A)

Question 9 : Two identical conducting balls A and B have positive charges q_1 and q_2 respectively. But $q_1 \neq q_2$. The balls are brought together so that they touch each other and then kept in their original positions. The force between them is _____.

(A) same as that before the balls touched

(B) zero

(C) less than that before the balls touched

(D) greater than that before the balls touched

Answer : (D)

Question 10 : Two identical metal spheres charged with +12mF and -8mF are kept at certain distance in air. They are brought into contact and then kept at the same distance. The ratio of the magnitudes of electrostatic forces between them before and after contact is

(A) 12 : 1

(B) 8 : 1

(C) 24 : 1

(D) 4 : 1

Answer : (C)