PHYSICS   PAPER-I   (OLD SCHEME)   TIME ALLOWED: 20 Minutes
GROUP-II   **OBJECTIVE**   MAXIMUM MARKS: 17

Note: **You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled.   Do not solve question on this sheet of OBJECTIVE PAPER.**

Q.No.1

(1)   The number of base units in International System of Units is:-

     (A) Six   (B) Three   (C) Seven   (D) Four

(2)   S.I unit of solid angle is:-   (A) Degree   (B) Radian   (C) Steradian   (D) Second

(3)   ____ is correct.   (A) $\hat{A} = \dfrac{\vec{A}}{|A|}$ (B) $\hat{A} = \vec{A}|A|$ (C) $\hat{A} = \dfrac{|A|}{\vec{A}}$ (D) $\hat{A} = \vec{A}.\vec{A}$

(4) $\hat{i} . \left(\hat{j} \times \hat{k} \right) =$ (A) 0   (B) $\hat{i}$ (C) 1   (D) -1

(5)   The range and maximum height of a projectile are equal if the angle of projection is equal to:-

     (A) 45° (B) 76° (C) 60° (D) 90°

(6)   1 kilowatt hour is equal to:-   (A) $36 \times 10^6 J$ (B) $3.6 \times 10^6 J$ (C) $0.36 \times 10^6 J$ (D) $3.0 \times 10^8 J$

(7)   A body is moving in a circle of radius "r" with constant speed "v".

     Its centripetal acceleration is equal to:-   (A) $\dfrac{v}{r}$ (B) $\dfrac{v}{r^2}$ (C) $\dfrac{v^2}{r}$ (D) $\dfrac{r^2}{v}$

(8)   The orbital velocity of a satellite at a distance "r" from the center of earth is given by:-

     (A) $\sqrt{\dfrac{GM}{r}}$ (B) $\sqrt{\dfrac{r}{GM}}$ (C) $\dfrac{\sqrt{r}}{GM}$ (D) $\dfrac{\sqrt{GM}}{r}$

(9)   The terminal velocity of a sphere of radius "r" moving through a fluid is directly proportional to:-

     (A) r (B) r^2 (C) r^3 (D) r^4

(10)   The time period of a mass spring system is given by:-

     (A) $T = 2\pi\sqrt{\dfrac{k}{m}}$ (B) $T = \dfrac{1}{2\pi}\sqrt{\dfrac{k}{m}}$ (C) $T = \dfrac{1}{2\pi}\sqrt{\dfrac{m}{k}}$ (D) $T = 2\pi\sqrt{\dfrac{m}{k}}$

(11)   A set of frequencies which are multiples of fundamental frequency are called:-

     (A) Nodal frequencies   (B) Beat frequencies   (C) Harmonics   (D) Doppler frequencies

(12)   The speed of sound in air would become double than its speed at $20^o C$ at temperature.

     (A) $313^o C$ (B) $40^o C$ (C) $899^o C$ (D) $1172^o C$

(13)   The wave nature of light was proposed by:-

     (A) Thomas Young   (B) Maxwell   (C) Newton   (D) Huygen

(14)   The phase change of 180° is equal to the path difference of:-

     (A) λ (B) $\dfrac{\lambda}{2}$ (C) 2λ (D) 3λ

(15)   The instrument used to see the distant objects is called:-

     (A) Microscope   (B) Magnifying glass   (C) Telescope   (D) Spectrometer

(16)   The relation for pressure of a gas is given by:-   (A) $P = \dfrac{2}{3}\dfrac{N}{V} < \dfrac{1}{2}mv^2 >$

     (B) $P = \dfrac{2}{3}\dfrac{V}{N} < \dfrac{1}{2}mv^2 >$ (C) $P = \dfrac{3}{2}\dfrac{V}{N} < \dfrac{1}{2}mv^2 >$ (D) $P = \dfrac{3}{2}\dfrac{N}{V} < \dfrac{1}{2}mv^2 >$

(17)   For an isothermal process, the First Law of Thermodynamics reduces to:-

     (A) $Q = \Delta U + W$ (B) $Q = \Delta U$ (C) $Q = W$ (D) $Q = \Delta U - W$