

## PHYSICS PAPER-I GROUP-II (NEW SCHEME)

TIME ALLOWED: 20 Minutes

**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 bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles 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 questions on this sheet of OBJECTIVE PAPER.

Q.No.1

- (1) When a body is in circular motion, the angle between linear and angular velocity is:-  
 (A)  $180^\circ$  (B)  $90^\circ$  (C)  $45^\circ$  (D)  $0^\circ$
- (2) The linear velocity of a disc when it reaches the bottom of an inclined plane of height 'h' is:-  
 (A)  $\sqrt{gh}$  (B)  $\sqrt{\frac{4}{3}gh}$  (C)  $\sqrt{\frac{2}{3}gh}$  (D)  $\sqrt{\frac{1}{3}gh}$
- (3) The term  $\frac{1}{2}\rho v^2$  in Bernoulli's equation has the same unit as:-  
 (A) Work (B) Volume (C) Pressure (D) Force
- (4) If 30 waves per second pass through a medium at a speed of  $30\text{ ms}^{-1}$ , then the wavelength is:-  
 (A) 30 m (B) 15 m (C) 1 m (D) 28 m
- (5) Radar system is an application of:-  
 (A) Interference (B) Beats (C) Stationary waves (D) Doppler's effect
- (6) The example of mechanical waves is:-  
 (A) Water waves (B) Radio waves (C) Infrared waves (D) Ultraviolet waves
- (7) Light entering from air to glass does not give change in its:-  
 (A) Frequency (B) Wavelength (C) Velocity (D) Direction
- (8) The final image formed by a simple microscope is:-  
 (A) Virtual and inverted (B) Virtual and erect (C) Real and erect (D) Real and inverted
- (9) \_\_\_\_\_ will travel faster than others through an optical fibre.  
 (A) Ultraviolet light (B) Visible light (C) Infrared light (D) White light
- (10) The unit of entropy is:-  
 (A)  $J/K$  (B)  $K/J$  (C)  $J/K^2$  (D)  $J/K$
- (11) A heat engine operates between the temperatures 1000 K and 400 K. Its efficiency can be equal to:-  
 (A) 50 % (B) 60 % (C) 70 % (D) 100 %
- (12) One light year is equal to:-  
 (A)  $9.5 \times 10^{15} \text{ m}$  (B)  $9.6 \times 10^{15} \text{ m}$  (C)  $9.5 \times 10^{-15} \text{ m}$  (D)  $9.6 \times 10^{-16} \text{ m}$
- (13) The sum of three numbers, 2.7543, 4.10 and 1.273 up to the correct decimal place is:-  
 (A) 8.12 (B) 8.13 (C) 8.1273 (D) 8.127
- (14) The cross product of a vector  $\vec{A}$  with itself results:-  
 (A)  $\vec{A}$  (B)  $A^2$  (C) Zero (D) Null vector
- (15) A force of 10 N makes an angle of  $30^\circ$  with y-axis. The magnitude of x-component will be:-  
 (A) 5 N (B) 8.66 N (C) 10 N (D) Zero
- (16) A force of 10 N acts on a body of mass 5 kg for one second. The change in its momentum will be:-  
 (A)  $10 \text{ kgms}^{-1}$  (B)  $50 \text{ kgms}^{-1}$  (C)  $2 \text{ kgms}^{-1}$  (D)  $20 \text{ kgms}^{-1}$
- (17) \_\_\_\_\_ is the biofuel.  
 (A) Water (B) Petrol (C) Ethanol (D) Oil

Paper Code

2018 (A)

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Number:

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INTERMEDIATE PART-I (11<sup>th</sup> CLASS)**PHYSICS PAPER-I GROUP-I (NEW SCHEME)**

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Q.No.1

- (1) Einstein's theory gives us a physical picture of how the:- (A) Body moves  
(B) Gravity works (C) Moment of inertia produced (D) Weightlessness creates
- (2) The dimensions of  $\rho gh$  has same as that of:-  
(A) Work (B) Energy (C) Pressure (D) Mass
- (3) Time period of simple pendulum only depends on its:-  
(A) Mass (B) Amplitude (C) Density (D) Length
- (4) When an observer is moving away from the source with velocity  $U_0$  from a stationary source then relative velocity of the waves and the observer is:-  
(A)  $V + U_0$  (B)  $V - U_0$  (C)  $\frac{V + U_0}{2}$  (D) Zero
- (5) \_\_\_\_\_ is correct relation.  
(A)  $\frac{v_t}{v_0} = \frac{\rho_0}{\rho_t}$  (B)  $\frac{v_t}{v_0} = \frac{\rho_t}{\rho_0}$  (C)  $\frac{v_t}{v_0} = \sqrt{\frac{\rho_t}{\rho_0}}$  (D)  $\frac{v_t}{v_0} = \sqrt{\frac{\rho_0}{\rho_t}}$
- (6) A ray of light shows the direction of propagation of light. It is a line which is:-  
(A) Normal to the wave front (B) Parallel to wave front  
(C) Opposite to wave front (D) Equal to wave front
- (7) Light waves are:-  
(A) Longitudinal waves (B) Transverse waves (C) Stationary waves (D) Mechanical waves
- (8) The magnification of a convex lens of focal length 5 cm is equal to:- (A)  $\frac{1}{5}$  (B) 5 (C) 6 (D) 25
- (9) In adiabatic process the first law of thermodynamics becomes:-  
(A)  $W = -\Delta U$  (B)  $W = Q$  (C)  $Q = \Delta U$  (D)  $W = -Q$
- (10) The change in entropy  $\Delta s$  is equal to:-  
(A)  $\frac{\Delta Q}{\Delta T}$  (B)  $\frac{\Delta Q}{T}$  (C)  $\frac{\Delta T}{\Delta Q}$  (D)  $\frac{T}{\Delta Q}$
- (11) In the light of Einstein's famous equation  $E = mc^2$ , the energy for mass of 2 kg is equal to:-  
(A)  $3 \times 10^8$  joule (B)  $9 \times 10^{16}$  joule (C)  $4 \times 10^{16}$  joule (D)  $18 \times 10^{16}$  joule
- (12) The number of significant figures in 0.00232 are:- (A) 6 (B) 5 (C) 3 (D) 4
- (13) If both components  $R_x$  and  $R_y$  of resultant vector  $\vec{R}$  are negative then angle " $\theta$ " of  $\vec{R}$  along  $x$ -axis will be:-  
(A)  $\theta = 270^\circ$  (B)  $180^\circ < \theta < 270^\circ$  (C)  $180^\circ > \theta > 270^\circ$  (D)  $\theta \leq 270^\circ$
- (14) The magnitude of  $\hat{A}$  will be:- (A) Zero (B)  $A^2$  (C) 1 (D)  $A$
- (15) If the initial velocity of a projectile becomes doubled. The time of flight will become:-  
(A) Double (B) Same (C) 3 times (D) 4 times
- (16) For freely falling body, in the presence of force of friction the:-  
(A) Loss in P.E. = gain in K.E. (B) Loss in P.E. < gain in K.E.  
(C) Loss in P.E. > gain in K.E. (D) Loss in P.E. = 0
- (17) The ratio of moment of inertia of hoop to the moment of inertia of disc (if their masses and radii are same) is equal to:- (A) 2 (B)  $\frac{1}{2}$  (C) 4 (D)  $\frac{1}{4}$