

NEET Sample Paper 3 PDF for Class 12 (Physics)

1. A steel wire of cross-sectional area $3 \times 10^{-6} \text{ m}^2$ can withstand a maximum strain of 10^{-3} . Young's modulus of steel is $2 \times 10^{11} \text{ N/m}^2$. The maximum mass the wire can hold is; (Take $g = 10 \text{ m/s}^2$)

- (1) 40 kg (2) 60 kg
(3) 80 kg (4) 100 kg

2. A block of wood floats in water with $\frac{1}{3}$ of its volume submerged. If the same block just floats (completely immersed) in a liquid, the density of the liquid (in kg m^{-3}) is;

- (1) 1250 (2) 600
(3) 400 (4) 800

3. Assertion: A body falling freely under the force of gravity has constant acceleration (9.81 m/sec^2). Reason: Earth attracts everybody towards its centre by the same force.

- (1) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
(2) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
(3) Assertion (A) is true and Reason (R) is false.
(4) Assertion (A) is false and Reason (R) is true.

4. Assertion: To cross the river in minimum time, man should swim in perpendicular to the direction of flow of river.

Reason: In this case along the perpendicular direction to river flow, the component of velocity of man becomes maximum.

- (1) Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
(2) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
(3) Assertion (A) is true and Reason (R) is false.
(4) Assertion (A) is false and Reason (R) is true.

5. Statement-I: No work is done on a revolving electron around the nucleus of an atom. Statement-II: Work done by centripetal force is always zero.

(1) Statement I and Statement II both are correct. (2) Statement I is correct, but Statement II is incorrect.

(3) Statement I is incorrect, but Statement II is correct.

(4) Statement I and Statement II both are incorrect.

6. Two physical quantities have same dimensions then their magnitude; (1) cannot be multiplied.

(2) may be added.

(3) can always be added.

(4) cannot be added or subtracted.

7. A ball is dropped downwards, after 1 sec another ball is dropped downwards from the same point. What is the distance between them, after 3 sec, the first ball has fallen?

(1) 25 m (2) 20 m

(3) 50 m (4) 9.8 m

8. The velocity of water in a river is 18 km/h near the surface. If the river is 5m deep, find the shearing stress between the horizontal layers of water. The co-efficient of viscosity of water is 10^{-2} poise;

(1) 10^{-1} N/m² (2) 10^{-2} N/m² (3) 10^{-3} N/m²

(4) 10^{-4} N/m²

9. An automobile travelling with a speed of 60 km/h, can brake to stop within a distance of 20m. If the car is going twice as fast i.e., 120 km/h, the stopping distance will be;

(1) 60 m (2) 40 m

(3) 20 m (4) 80 m

10. Out of the following quantities, which one has dimensions different from the remaining three?

(1) Energy per unit volume

(2) Force per unit area

(3) Product of voltage and charge per unit volume

(4) Angular momentum

11. The moment of inertia of a body about a given axis is 1.2 kg/m^2 . Initially, the body is at rest. In order to produce a rotational kinetic energy of 1500 joule, an angular acceleration of 25 radian/sec^2 must be applied about that axis for a duration of;

- (1) 4 seconds (2) 2 seconds
- (3) 8 seconds
- (4) 10 seconds

12. A metal ball of mass 2 kg moving with a velocity of 36 km/h has a head on collision with a stationary ball of mass 3 kg. If after the collision, the two balls move together, the loss in kinetic energy due to collision;

- (1) 140 J
- (2) 100 J
- (3) 60 J
- (4) 40 J

13. The escape velocity of an object launched from the surface of the earth;

- (1) depends on the mass of object.
- (2) depends on the mass of planet towards which, it is moving.
- (3) does not depend on the mass of earth.
- (4) does not depend on the mass of object.

14. A sonometer wire supports a 4 kg load and vibrates in fundamental mode with a tuning fork of frequency 416 Hz. The length of the wire between the bridges is now doubled. In order to maintain fundamental mode, the load should be changed to;

- (1) 1 kg (2) 2 kg
- (3) 4 kg (4) 16 kg

15. Tension in the cable supporting an elevator, is equal to the weight of the elevator. From this, we can conclude that the elevator is going up or down with a;

- (1) uniform velocity
- (2) uniform acceleration
- (3) variable acceleration
- (4) either (2) or (3)

16. A car moving on a horizontal road may be thrown out of the road in taking a turn;

- (1) by the gravitational force.
- (2) due to the lack of proper centripetal force.
- (3) due to the rolling frictional force between the tyre and road.
- (4) due to the reaction of the ground.

17. The total K.E. of one mole of an ideal gas is

$E = (3/2)RT$. Then C_p will be;

- (1) $0.5 R$ (2) $0.1 R$
- (3) $1.5 R$ (4) $2.5 R$

18. The force acting on a particle varies with displacement x as $F = kx$ then work done by the

force in displacing particle from $(0, 0)$ to $(x, 0)$ will be proportional to; (1) $x^{2/3}$ (2) x^2
(3) x^3 (4) x

19. A force of $10 N$ acts on a body of mass $20 kg$ for 10 seconds. Change in its momentum is;

- (1) $5 kg m/s$
- (2) $100 kg m/s$
- (3) $200 kg m/s$
- (4) $1000 kg m/s$

20. The work of $146 kJ$ is performed in order to compress one kilo mole of gas adiabatically and in this process the temperature of the gas increases by $7^\circ C$. The gas is ($R = 8.3 J mol^{-1} K^{-1}$);

- (1) diatomic
- (2) triatomic
- (3) a mixture of monoatomic and diatomic
- (4) monoatomic