

Physics

Directions

You are given following questions from the topic, with four choices A through D. Select the choice that will answer the question best.

- The dimensions of weight are
A) MLT^{-1} B) MLT^2
C) LT^{-2} D) ML^2T
- Gamma rays are not easily stopped by matter because
A) They have no charge B) They have no rest mass
C) They exert no coulomb force D) All of the above
- Acceleration is not produced in the body under the application of
A) Unbalanced force B) Balanced force
C) Infinite force D) Normal force
- Momentum of the body is equal to
A) Vector product of mass and velocity B) Dot product of mass and velocity
C) Product of mass & velocity D) None of these
- The dimension of angular velocity are
A) LT^{-1} B) T^{-1}
C) L^{-1} D) $L^2 T^{-1}$
- If an object is placed in front of a diverging lens, then the image will be
A) Virtual B) Real and erect
C) Virtual and erect D) Virtual and inverted

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7. Pressure exerted by a perfect gas is equal to
- | | |
|--|---|
| A) Mean K.E per unit volume | B) Half of mean K.E per unit volume |
| C) One third of mean K.E per unit volume | D) Two third of mean kinetic energy per unit volume |
8. Electric flux through a medium can be
- | | |
|------------|-----------------|
| A) Zero | B) Maximum |
| C) Minimum | D) All of these |
9. To move a unit positive charge over an equipotential surface, the required value of amount of work done is
- | | |
|-------------|------------------|
| A) Positive | B) Negative |
| C) Zero | D) None of these |
10. For small value of θ , the acceleration of the bob is written as
- | | |
|-------------------------|-------------------------|
| A) $a = -g\theta$ | B) $a = g\theta$ |
| C) $a = -g \cos \theta$ | D) $a = +g \cos \theta$ |
11. In young's double slit experiment, the separation between the slits is halved and the distance between slits and the screen is doubled. The fringe width is:
- | | |
|--------------|----------------|
| A) Unchanged | B) Halved |
| C) Doubled | D) Quardrupled |
12. Nuclear forces are
- | | |
|-----------------------------------|-----------------------|
| A) Long range forces | B) Short range forces |
| C) Both long & short range forces | D) None of the these |
13. Compton effect shows that
- | | |
|--------------------------------|----------------------------|
| A) x-rays are waves | B) x-rays have high energy |
| C) x-rays can penetrate matter | D) Photon have momentum |

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14. Which of the three forces gravitational, electrostatic and nuclear is/are able to provide attraction between two neutrons?
- A) Electrostatic and nuclear
B) Gravitational and nuclear
C) Electrostatic and gravitational
D) Only nuclear
15. The rate of emission of photoelectrons from a metal surface depends on
- A) Work function of the metal
B) Wave length of radiation
C) Electric potential of the metal
D) Intensity of radiation
16. A photon ν in vacuum. Its final speed will be
- A) $\frac{e\nu}{2m}$
B) $\frac{e\nu}{m}$
C) $\sqrt{2e\nu/m}$
D) $\sqrt{e\nu/m}$
17. Which of the following has maximum frequency ?
- A) x-rays
B) Infrared rays
C) Violet rays
D) Radio waves
18. Energy obtained when 1mg mass is completely converted into energy is
- A) 3×10^2 J
B) 3×10^{10} J
C) 9×10^{10} J
D) 9×10^2 J
19. An electron in motion is associated with
- A) Only a magnetic field
B) Only an electric field
C) Either electric or magnetic fields
D) Both electric and magnetic field
20. Escape velocity of the earth is
- A) 11.7 km/s
B) 11.9 km/s

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C) 11.2 km/s

D) None

ANSWERS

1.	B	2.	D	3.	B	4.	B
5.	B	6.	C	7.	D	8.	D
9.	C	10.	A	11.	D	12.	B
13.	D	14.	B	15.	D	16.	C
17.	A	18.	A	19.	A	20.	C