FIRST TERM EXAMINATION:2026
IX.PHYSICS- Answer Key

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1.Fig.b

2.d. Statement is false, but reason is true

3.a. ii & iii are correct

4.b. This is an internal force

5.Figure (b) is correct. Because when light travels from a denser medium to a rarer medium, the refracted ray bends away from the normal.

6.a. Graph.b

b. Graph.c

7.a.Resultant force is 20 N towards east

b. The force towards east should be reduced to 100 N

8.a. balanced force.

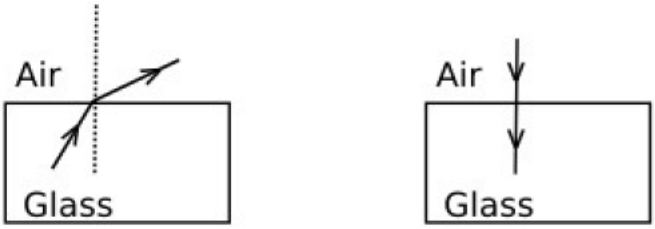
b. Unbalanced force. Only unbalanced external can change velocity of an object.

9.a. Inertia of motion is the tendency of the body to continue in its state of uniform motion.

b. First law

10.A

10B.



11.A

Vector quantity	magnitude and direction are mentioned	Acceleration
Scalar quantity	Direction is not mentioned	distance

11B.i. Speed is a scalar quantity, but velocity is a vector quantity.

ii. Speed can never be negative, but velocity can be positive or negative

12.a. Refraction

When a ray of light enters obliquely from one medium to another of different optical densities, it undergoes a deviation at the surface of separation of the mediums. This phenomenon is refraction.

b. When light rays from the coin pass from water to air, they bend away from the normal, so the coin appears at a higher position than its actual depth.

13.a. Angle of incidence = 45°

Angle of refraction = 90 – 60 = 30°

b. i. When light is incident normal to the surface.

ii. When light travels from one medium to another medium of the same optical density.

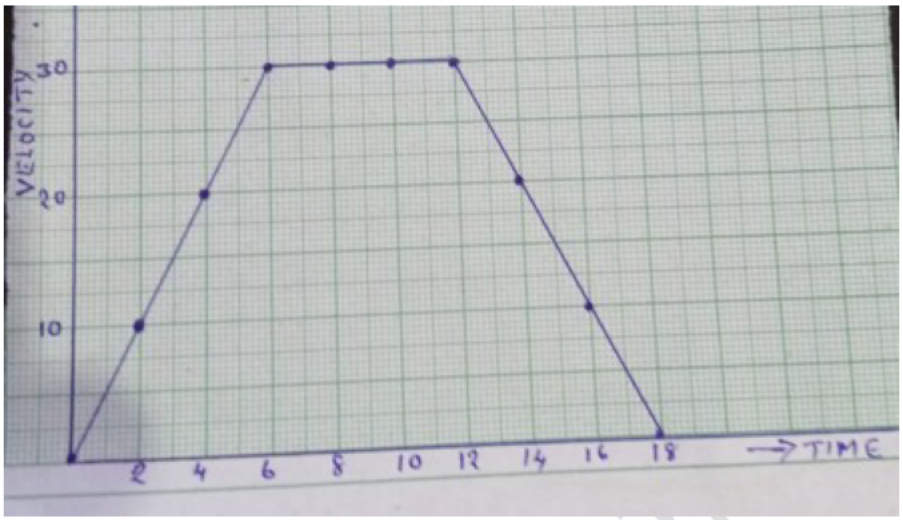
14.a. deviates towards the normal

b. Refractive index = c/v = $3x10^8/2x10^8$ = 1.5

15.a. distance = 400 m Speed = 400/50 = 8 m/s

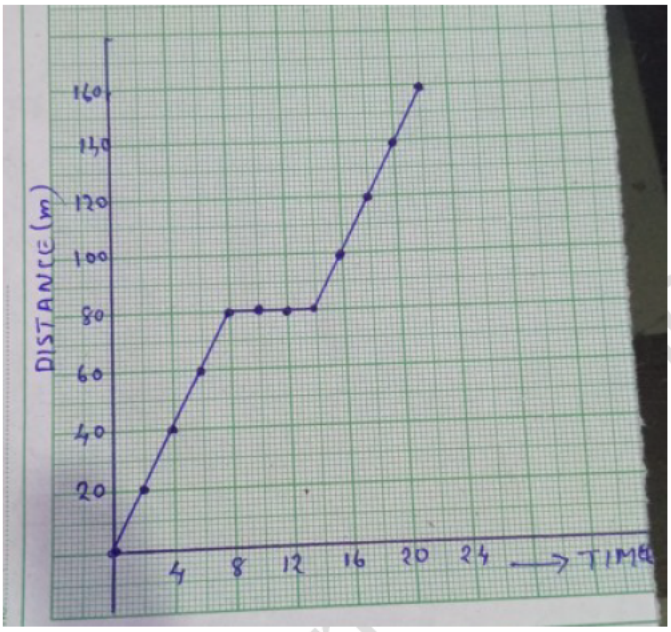
b, Displacement = 0 Average velocity = 0

16A.



Displacement = Area of the trapezium = ½h(a+b) = ½x30x(18+6) = 360 m

16B.



Distance covered in 17th second = 110 m

17A.a. It is better to use white coloured dress in dim light.

b. A pedestrian should walk on the right side of the road when there is no footpath.

c. Pedestrians should use the footpath if available.

17B. Road signs are classified into three categories.

i. **Mandatory signs.**

These are the warning signs that must compulsorily followed. They are marked in red circles.

ii.**Cautionary signs**

These are meant to warn about the condition of the road in journey ahead. It is marked in red triangles.

iii. **Informatory signs:**

It is usually marked in blue rectangle. These signs provide the information about the facilities, the direction to go etc.

18A. a.u = 80 m/s S = 8 cm = 0.08 m v = 0

We have $v^2 = u^2 + 2aS$

$0 = 80^2 + 2xax0.08$

Acceleration, a = $-6400/0.16 = -40000\ m/s^2$

b. v = u + at

0 = 80 + -40000xt

Or t = 80/40000 = 0.002 s

18B.a. Distance travelled = 30+30+50 = 110 m

b. Displacement = 50 m

c. S = 80 m a = $10\ m/s^2$ u = 0

$S = ut + ½at^2$

$80 = 0xt + ½x10xt^2$

$t^2 = 80/5 = 16$

t = 4 s