

**Kendriyavidyalayasangathan**

**ZIET, BHUBANESWAR**



**Multiple choice questions in Physics for  
class IX**

**Prepared under the guidance of**

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## Chapter8 ----MOTION

Answer the following by choosing the correct option

- 1 Rate of change of displacement is called
  - a. Speed
  - b. Velocity
  - c. acceleration
  - d. deceleration
- 2 Acceleration is a vector quantity, which indicates that its value
  - a. Can be positive, negative or zero
  - b. Is always negative
  - c. Is always positive
  - d. Is zero
- 3 A man travels a distance of 20 km from his home to office, and 10 km towards his house back. Then the displacement covered by the man in the whole trip is
  - a. 30 km
  - b. zero km
  - c. 10 km
  - d. 50 km
- 4 A farmer moves along the boundary of a square field of side 10 m in 40 sec. The magnitude of displacement of the farmer at the end of 2 minutes 20 seconds from his initial position is
  - a. 10m
  - b. 30m
  - c. 40m
  - d.  $10\sqrt{2}$ m
- 5 An object travels 20m in 5 sec and then another 40m in 5 sec. What is the average speed of the object?
  - a. 12m/s
  - b. 6m/s
  - c. 2m/s
  - d. 0 m/s
- 6 Formula to find the average velocity of a body is given by
  - a.  $V = u + at$
  - b.  $S_n = u + a/2(2n-1)$
  - c.  $S = ut + \frac{1}{2} a t^2$
  - d.  $V_{av} = (u + v)/2$
- 7 SI Unit of measurement of acceleration is
  - a. m/s
  - b. m/hr
  - c.  $m/s^2$
  - d. M
- 8 An example of a body moving with constant speed but still accelerating is
  - a. A body moving with constant speed in a circular path
  - b. A body moving in a helical path with constant speed
  - c. A body moving with constant speed on a straight road
  - d. A body moving with constant speed on a straight railway track
- 9 The acceleration of a body from a velocity –time graph is
  - a. Equal to the slope of the graph
  - b. Is denoted by a line parallel to the time axis at any point on the distance axis
  - c. Area under the graph
  - d. Is denoted by a line parallel to the distance axis at any point on the time axis
- 10 Distance covered by a body from velocity-time graph is
  - a. Area under the graph
  - b. Equal to the slope of the graph
  - c. Equal to the slope of the graph
  - d. Area under the graph

b. Is denoted by a line parallel to the time axis at any point on the distance axis

d. Is denoted by a line parallel to the distance axis at any point on the time axis

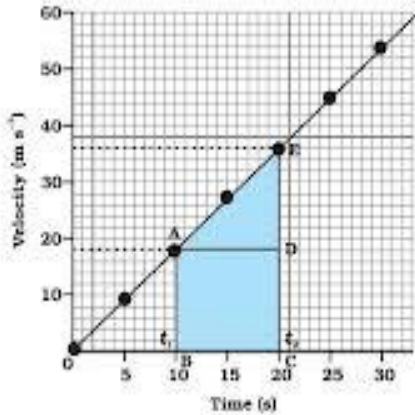


Fig.6: Velocity-time graph for a car moving with uniform acceleration.

Answer the following from the above graph

- 11 From the figure the body is moving with  
 a Variable Acceleration                      c Zero Acceleration  
 b Constant Acceleration                      d Zero velocity

- 12 Distance covered by the body during the interval from 10sec to 20 sec is  
 a 200m    c 270m  
 b 360m    d 400m

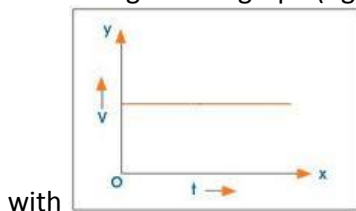
- 13 At the point A the body is at a distance of  
 a 180m    c 200m  
 b 300m    d 50m

- 14 The velocity of the body at the point 'B' is  
 a 40m/s    c 50m/s  
 b 36m/s    d 20m/s

- 15 In the total journey the body has travelled up to a distance of  
 a 1000m    c 900m  
 b 800m    d 270m

- 16 What does the slope of distance - time graph give?  
 a Speed    c uniform speed  
 b acceleration                                      d both [a] and [c] depending upon the time of graph

- 17 From the given v-t graph (figure) it can be inferred that the object is moving



- |   |                  |   |                                  |
|---|------------------|---|----------------------------------|
| a | uniform velocity | c | non uniform velocity             |
| b | At rest          | d | moving with uniform acceleration |

## Chapter 9 FORCE AND LAWS OF MOTION

1. There will be a change in the speed or in the direction of motion of a body when it is acted upon by
 

a. Uniform force	c. Zero Force
b. An Unbalanced force	d. Balanced Force
  
2. Force required in accelerating a 2 kg mass at  $5 \text{ m/s}^2$  and a 4 kg mass at  $2 \text{ m/s}^2$ 

a. Same in both the cases	c. 2kg mass at $5 \text{ m/s}^2$ is greater than 4 kg mass at $2 \text{ m/s}^2$
b. 2kg mass at $5 \text{ m/s}^2$ is less than 4 kg mass at $2 \text{ m/s}^2$	d. Zero in both the cases
  
3. Formula to find the Force is
 

a. $F = ma$	c. $F = m/a$
b. $F = a/m$	d. $a = Fm$
  
4. Inertia is a measure of
 

a. Force	c. acceleration
b. Mass	d. velocity
  
5. An object of mass 2 kg is sliding with a constant velocity of 4 m/s on a frictionless horizontal table. The force required to keep the object moving with the same velocity is
 

a. 32N	c. 8N
b. 0 N	d. 2N
  
6. Rocket works on the principle of conservation of
 

a. Mass	c. momentum
b. Energy	d. velocity
  
7. A passenger in a moving train tosses a coin which falls
 

a. In front of him	c. Behind him
b. Falls outside the train	d. Will not move
  
8. In the following example, try to identify the number of times the velocity of ball changes:  
 "A football player kicks a football to another player of his team who kicks the football towards the goal. The goalkeeper of the opposite team collects the football and kicks it towards a player of his own team."  

a. Five times	c. Four times
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## Chapter10      GRAVITATION

1. The value of acceleration due to gravity of the surface of the earth is
  - a.  $6 \text{ m/s}^2$
  - b.  $4.9 \text{ m/s}^2$
  - c.  $9.8 \text{ m/s}^2$
  - d.  $8 \text{ m/s}^2$
  
2. The value of acceleration due to gravity at the highest point of the motion of the body when a body is projected upwards
  - a.  $0 \text{ m/s}^2$
  - b.  $9.8 \text{ m/s}^2$  upwards
  - c.  $9.8 \text{ m/s}^2$  downwards
  - d.  $6 \text{ m/s}^2$
  
3. The value of acceleration due to gravity at the poles
  - a. Is more than at the equator
  - b. Is less than at the equator
  - c. Same as at the equator
  - d. zero
  
4. Weight of an object on the surface of the moon is
  - a.  $1/5$  th that on the surface of the earth
  - b.  $1/2$  that on the surface of the earth
  - c.  $1/3$  that on the surface of the earth
  - d.  $1/6$  that on the surface of the earth
  
5. The time of ascent when measured from the point of projection of a body projected upwards, the
  - a. Time of ascent  $>$  Time of descent
  - b. Time of ascent = Time of descent
  - c. Time of ascent  $<$  Time of descent
  - d. All of the above
  
6. The force which keeps the body to move in circular motion when accelerated is
  - a. Force of gravitation
  - b. Centripetal force
  - c. Electrostatic force
  - d. Magnetic force
  
7. The expression for finding the gravitational force of attraction between any two bodies is
  - a.  $F = G m_1 m_2 / r^2$
  - b.  $F = G m_1 m_2 / r^3$
  - c.  $F = G m_1 m_2 / r$
  - d.  $F = G m_1 / r$
  
8. The force acting on an object perpendicular to the surface is called
  - a. Pressure
  - b. Weight
  - c. thrust
  - d. weight
  
9. SI Unit of pressure is
  - a. Newton
  - b. Dyne
  - c. Pascal
  - d.  $\text{m/s}$
  
10. The upward force exerted by the liquid displaced by the body when it is placed inside the liquid is called
  - a. Buoyant force
  - b. Centripetal force
  - c. Gravitational force
  - d. Force of gravitation

- 11 The weight of an object is:
- |   |                                     |   |                              |
|---|-------------------------------------|---|------------------------------|
| a | Greater on earth and lesser on moon | c | Equal on both earth and moon |
| b | lesser on earth and greater on moon | d | none of these                |
- 12 The relation between the weight of an object on the moon ( $W_M$ ) and on the earth ( $W_e$ )
- |   |                   |   |                 |
|---|-------------------|---|-----------------|
| a | $W_M = 1/6 (W_e)$ | c | $W_e = 1/6 W_M$ |
| b | $W_M = W_e$       | d | $W_M = 6 W_e$   |
- 13 If the distance between objects increases, then the gravitational force between the objects will:
- |   |          |   |               |
|---|----------|---|---------------|
| a | Increase | c | remain same   |
| b | decrease | d | none of these |
- 14 Which of the following was NOT a contribution of Newton's to science?
- |   |   |   |                                   |
|---|---|---|-----------------------------------|
| a | the law of universal gravitation  | c | $F = ma$                          |
| b | the first good experimental measure of G, the gravitational constant of proportionality | d | explanations of optical phenomena |
- 15 The mass of an object is
- |   |  |   |  |
|---|--|---|--|
| a | the force of gravity on that object located at a particular point in space               | c | dependent on whether the object is on the Earth or elsewhere.      |
| b | The amount of matter contained in the object, independent of where that object is found. | d | divided by the Earth's acceleration due to gravity to equal force. |

## Chapter11 WORK AND ENERGY


- 1 Work done by a body from Force-distance curve is
- |    |                                    |    |                                 |
|----|------------------------------------|----|---------------------------------|
| a. | Slope of the curve                 | c. | Area under the curve            |
| b. | Line parallel to the distance axis | d. | Line parallel to the Force axis |
2. A stone rubbed on a rough surface and placed on the skin will show heating sensation, because
- |   |                      |    |                                   |
|---|----------------------|----|-----------------------------------|
| a | Friction causes heat | c. | Heat cannot flow from the skin to |
|---|----------------------|----|-----------------------------------|
- Prepared by Mrs.T.Samrajya Lakshmi, PGT, Physics, ZIET, Bhubaneswar

- the stone
- b. Heat flows from the stone to skin      d. Heat cannot flow
3. On a rough surface a mass is (a) pulled,(b) pushed by a force acting at an angle with the surface.
- a. Pushing is easier      c. Pulling is easier  
b. Pushing and pulling both are easier      d. Pushing and pulling g are not easier
4. When a body rolls down an inclined plane, then it has
- a. Only Kinetic energy      c. It has potential energy  
b. Both kinetic and potential energy      d. It has no energy
5. When a spring is compressed work is done on it.Its elastic potential energy
- a. Decreases      c. increases  
b. Disappears      d. Does not change
6. When force acts in opposite direction the work done is
- a. Positive      c. negative  
b. Zero      d. infinity
7. The value of 1KWH is
- a.  $3.6 \times 10^5 \text{ J}$       c.  $3.6 \times 10^6 \text{ J}$   
b.  $3.6 \times 10^7 \text{ J}$       d.  $3.6 \times 10^9 \text{ J}$
8. Work done by tension in the string when a ball tied to a string is being whirled around in a circle is
- a. tension does no work at all      c. tension does negative work  
b. tension does positive work      d. tension does zero work
9. Mike applied 10 N of force over 3 m in 10 seconds. Joe applied the same force over the same distance in 1 minute. Who did more work?
- a. Mike      c. Joe  
b. both did the same work      d. both did zero work
10. A child on a skateboard is moving at a speed of 2 m/s. After a force acts on the child, her speed is 3 m/s. What can you say about the work done by the external force on the child?
- a. positive work was done      c. negative work was done  
b. Zero work was done      d. Infinite work was done
11. The potential energy of a girl is maximum
- a. sleeping on the ground      c. sitting on the ground  
b. standing      d. sitting on the chair
12. A spring is compressed. The P.E of the compressed spring
- a. increase      c. remains unchanged  
b. decrease      d. becomes zero



- 13 Power of a woman is equal to:
- |   |             |   |                   |
|---|-------------|---|-------------------|
| a | work x time | c | time/work         |
| b | work /time  | d | work /time x work |
- 14 When a body falls freely towards the earth then the total energy
- |   |          |   |                                    |
|---|----------|---|------------------------------------|
| a | increase | c | remains constant                   |
| b | decrease | d | first increases and then decreases |
- 15 Water stored in a dam possesses:
- |   |                |   |                   |
|---|----------------|---|-------------------|
| a | No energy      | c | potential energy  |
| b | kinetic energy | d | electrical energy |

## Chapter12      SOUND

- 1 For its propagation sound requires
- |    |      |    |                  |
|----|------|----|------------------|
| a. | Air  | c. | Water            |
| b. | Iron | d. | All of the above |
2. Compression is a region of
- |    |                      |    |              |
|----|----------------------|----|--------------|
| a. | High pressure        | c. | Low pressure |
| b. | Atmospheric pressure | d. | No pressure  |
3. Sound waves are
- |    |                           |    |                          |
|----|---------------------------|----|--------------------------|
| a. | Transverse in nature      | c. | Longitudinal in n nature |
| b. | Electromagnetic in nature | d. | Magnetic in nature       |
4. The distance between any two compressions or rarefactions in a longitudinal wave is
- |    |                      |    |                       |
|----|----------------------|----|-----------------------|
| a. | Half wavelength      | c. | One wavelength        |
| b. | Twice the wavelength | d. | One fourth wavelength |
5. SI unit of frequency is
- |    |       |    |                  |
|----|-------|----|------------------|
| a. | Meter | c. | m/s              |
| b. | Hertz | d. | m/s <sup>2</sup> |
6.  If the wave is propagating having the number of waves shown in the figure per second ,then the frequency of the wave is
- |    |     |    |      |
|----|-----|----|------|
| a. | 5Hz | c. | 6Hz  |
| b. | 3Hz | d. | 10Hz |
7. Pitch of the wave is measured in terms of
- |    |                       |    |                         |
|----|-----------------------|----|-------------------------|
| a. | Amplitude of the wave | c. | Speed of the wave       |
| b. | Frequency of the wave | d. | Time period of the wave |
8. The sound which is produced due to a mixture of several frequencies is called

- |    |           |    |           |
|----|-----------|----|-----------|
| a. | A tone    | c. | A note    |
| b. | Frequency | d. | Amplitude |
9. Speed of sound in vacuum is
- |    |         |    |        |
|----|---------|----|--------|
| a. | 340 m/s | c. | 600m/s |
| b. | 380m/s  | d. | 300m/s |
10. The time period of a simple pendulum in a spacecraft orbiting the earth is
- |    |            |    |             |
|----|------------|----|-------------|
| a. | Zero       | c. | Infinity    |
| b. | One second | d. | Two seconds |
11. Sound waves are
- |   |              |   |  |
|---|--------------|---|--|
| a | longitudinal | c | partly longitudinal, partly transverse       |
| b | transverse   | d | sometimes longitudinal, sometimes transverse |
12. The product of time-period and frequency is
- |   |       |   |               |
|---|-------|---|---------------|
| a | zero  | c | infinity      |
| b | unity | d | none of these |
13. Sound waves with frequency less than 20 Hz and more than 20000 Hz is called
- |   |                           |   |                           |
|---|---------------------------|---|---------------------------|
| a | Infrasonic and sonic boom | c | supersonic and ultrasonic |
| b | sonic boom and supersonic | d | infrasonic and ultrasonic |
14. The characteristic of sound which enables us to distinguish one sound from another having the same pitch and loudness
- |   |            |   |           |
|---|------------|---|-----------|
| a | amplitude  | c | timber    |
| b | Shrillness | d | intensity |
15. In gases a sound wave is
- |   |                   |   |                                     |
|---|-------------------|---|-------------------------------------|
| a | Transverse only   | c | Both Transverse and Longitudinal    |
| b | Longitudinal only | d | Neither Transverse Nor Longitudinal |

## Answer –Key(PHYSICS-IX)

Chapter-8( <b><u>MOTION</u></b> )			Chapter-9( <b><u>FORCE AND LAWS OF MOTION</u></b> )		
Q.No	option	Correct Answer	Q.No	option	Correct Answer
1	b	velocity	1	b	An Unbalanced force
2	a	Can be positive, negative, zero	2	c	2kg mass at $5\text{m/s}^2$ is greater than 4 kg mass at $2\text{m/s}^2$
3	c	10 km	3	a	$F = ma$
4	d	$10\sqrt{2}\text{m}$	4	b	Mass
5	b	$6\text{m/s}$	5	b	0 N
6	d	$V_{av} = (u + v)/2$	6	c	momentum
7	c	$\text{m/s}^2$	7	c	Behind him
8	a	A body moving with constant speed in a circular path	8	b	Three times
9	a	Equal to the slope of the graph	9	c	$-1\text{m/s}$
10	a	Area under the graph	10	c	Inertia of motion
11	b	Constant Acceleration	11	b	3 N leftwards
12	c	270m	12	a	Newton's first law of motion
13	a	180m	13	c	Resultant force on it is zero
14	b	$36\text{m/s}$	14	c	Must act on different objects
15	d	270m	15	b	2500N
16	b	Speed			
17	a	uniform velocity			

Chapter-10( <b><u>GRAVITATION</u></b> )		
Q.No	option	Correct Answer
1	c	$9.8\text{m/s}^2$
2	c	$9.8\text{m/s}^2$ downwards
3	a	Is more than at the equator
4	d	$1/6$ that on the surface of the earth
5	b	Time of ascent=Time of descent
6	b	Centripetal force
7	a	$F = Gm_1 m_2/r^2$
8	c	thrust
9	c	Pascal
10	a	Buoyant force
11	a	Greater on earth and lesser on moon
12	a	$W_M = 1/6 (W_e)$

13	b	decrease
14	b	the first good experimental measure of G, the gravitational constant of proportionality
15	b	The amount of matter contained in the object, independent of where that object is found.

Chapter-11 ( <b><u>WORK AND NERGY</u></b> )			Chapter-12 ( <b><u>SOUND</u></b> )		
Q.No	option	Correct Answer	Q.No	option	Correct Answer
1	c	Area under the curve	1	d	All of the above
2	a	Friction causes heat	2	a	High pressure
3	c	Pulling is easier	3	c	Longitudinal in nature
4	b	Both kinetic and potential energy	4	c	One wavelength
5	a	Decreases	5	b	Hertz
6	c	negative	6	a	5Hz
7	c	$3.6 \times 10^6 \text{ J}$	7	b	Frequency of the wave
8	a	tension does no work at all	8	c	A note
9	b	both did the same work	9	a	340 m/s
10	a	positive work was done	10	c	Infinity
11	b	standing	11	a	longitudinal
12	b	decrease	12	b	unity
13	b	work /time	13	d	infrasonic and ultrasonic
14	c	remains constant	14	c	timber
15	c	potential energy	15	c	Both Transverse and Longitudinal

