INDIAN SCHOOL AL WADI AL KABIR

DEPARTMENT OF SCIENCE

CLASS: XI	DEPARTMENT: PHYSICS	DATE: 25-06-2020
MARKS: 30	UNIT TEST-QP + MS	DURATION: 1 HOUR

GENERAL INSTRUCTIONS

THERE ARE A TOTAL OF 26 QUESTIONS. 25 QUESTIONS CARRY ONE MARK EACH. ONE QUESTION IS MATCH THE FOLLOWING WHICH HAS FIVE PARTS, EACH CARRIES ONE MARK.

1. If the displacement of a body is proportional to square of time then:

   (a) The body moves with uniform velocity.

   (b) The body moves with uniform acceleration.

   (c) The body moves with increasing acceleration.

   (d) The body moves with decreasing acceleration.

2. The acceleration of a moving body can be found from

(a) Area under distance – time graph

(b) Area under velocity – time graph

(c) Slope of the velocity – time graph

(d) Slope of the distance – time graph

3. If a particle moves with uniform speed v along a straight line, then its distance S is given by

(a) $S = \frac{v}{t}$

(b) S = v x t

(c) $S = v^2t$

(d) $S = ut + 0.5\ gt^2$

4. The numerical ratio of average velocity to average speed is:

(a) Always less than 1 **(b)** Always equal to 1

(c) Always more than 1 (**d)** Equal to or less than 1

5. From the top of a tower 100m in height a ball is dropped and at the same time another ball is projected vertically upwards from the ground with velocity of 25m/s. Find when and where the two balls will meet. (find the height from the ground). Take g =9.8m/s^2

(a) t =2s and height = 78.4m

(b) t = 4s and height = 21.6m

(c) t = 2s and height = 21.6m

(d) t= 3s and height = 78.4m

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6. The velocity of a bullet is reduced from 200m/s to 100m/s while travelling through a wooden block of thickness 10cm. The retardation, assuming it to be uniform, will be

(a) 10×10^4 m/s^2

(b) 12×10^4 m/s^2

(c) 13.5×10^4 m/s^2

(d) 15×10^4 m/s^2

7. What is the magnitude of $\hat{i} - \hat{j}$?

(a) 2

(b) 1

(c) 4

(d) $\sqrt{2}$

8. Two forces 80N and 60N act on a body at an angle of 90°.Find the magnitude of the resultant force.

(a) 140N

(b) 100N

(c) 6400N

(d) 3600N

9. The formula for maximum horizontal range

(a) $\frac{u^2 \sin^2 \theta}{2g}$

(b) $\frac{u^2}{2g}$

(c) $\frac{u^2}{g}$

(d) $\frac{2u}{g}$

10. The horizontal range obtained by throwing an object at an angle of 30° with the horizontal is 'R'. What will be the other angle to obtain the same horizontal range when the body is thrown with the same initial velocity u?

(a) 40°

(b) 60°

(c) 50°

(d) 90°

11. Which is a constant for a freely falling object?

(a) displacement

(b) velocity

(c) speed

(d) acceleration

12. If the angle between the horizontal and the direction of the 5.00 meters/second velocity decreases from 30° to 20°, the horizontal distance the ball travels will

(a) decrease

(b) remain the same

(c) Cannot be determined

(d) Increase

13. A book is pushed with an initial horizontal velocity of 5.0 meters per second off the top of a desk. What is the initial vertical velocity of the book?

(a) 10. m/s

(b) 50 m/s

(c) 2.5 m/s

(d)0 m/s

14. A projectile is fired a velocity of 150 meters per second at an angle of 30 degrees with the horizontal. What is the magnitude of the vertical component of the velocity at the time the projectile is fired?

(a) 150. m/s

(b) 225 m/s

(c) 130 m/s

(d) 75 m/s

15. An object was thrown at angle 60 degrees with the vertical with a velocity of 30m/s. What is the time of flight of the object?

(a) 5.2 s (b) 3 s (c) 1.5 s (d) 2.6 s

16. A vector of unit magnitude drawn in the direction of a given vector is called _____

(a) Parallel vector
(b) Null vector
(c) Unit vector
(d) Like vector

17. If two vectors have the same direction but different magnitude are called _____

(a) Like vectors

(b) Coplanar vectors

(c) Equal vectors

(d) Co-initial vectors

18.The unit vectors which represent the direction of the X- axis, Y- axis and Z axis of the Cartesian coordinate system are collectively known as _____ .

(a) Co-initial vectors.

(b) Coplanar vectors

(c) Collinear vectors

(d) Orthogonal unit vectors

19. Horizontal motion of a projectile is with _____

(a) Uniform acceleration

(b) Zero acceleration

(c) Negative acceleration

(d) a combination of positive and negative acceleration.

20. The angle of projection for the maximum horizontal range is _____

(a) 90°

(b) 60°

(c) 45°

(d) 30°

21. Two bodies are projected with the same velocity. If one is projected at an angle of 30°and the other at an angle of 60° to the horizontal, the ratio of the maximum height reached by the two bodies is _____

(a) 1:3 (b) 1:1 (c) $1:\sqrt{3}$ (d) $\sqrt{3}:1$

22. A body is projected horizontally from the top of a cliff with a velocity of 9.8m/s. The time elapses before horizontal and vertical velocities become equal is _____ (Take g = 9.8m/s^2)

(a) 2s (b) 3s (c) 9s (d) 1s

23. The range of a projectile when launched at an angle of 15° to the horizontal is 1.5km. The range of the projectile when launched at an angle of 45° to the horizontal is _____

(a) 3km (b) 2km (c) 1.5km (d) 0.75km

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24. The angle between the direction of horizontal velocity and acceleration at the highest point of the path of a projectile is _____

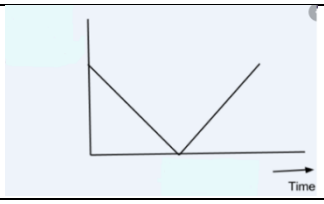
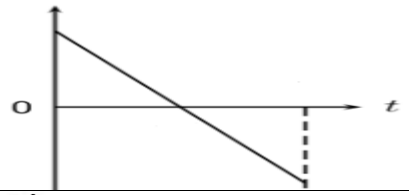
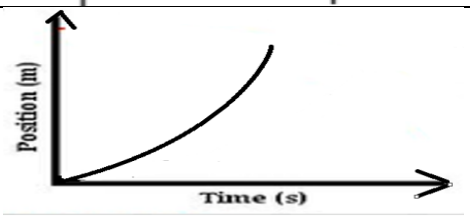
(a) 0° (b) 45 ° (c) 90° (d) 60°

25. A train of 200 m length is going toward east at a speed of 15m/s. A bird flies at a speed of 5m/s towards west direction parallel to the railway track. What is the time taken by the bird to cross the train?

(a) 20 s (b) 15 s (c) 10 s (d) 12 s

Ans. (c) 10 s

26. Match the following

1.Velocity-time graph of a body moving with uniform velocity	A 
2.Distance time graph of a body at rest	B 
3. Speed -time graph of a body which is thrown upwards and coming back to the thrower.	C 
4. Velocity-time graph of a body which is thrown upward and then coming back to the thrower.	D 

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5. Distance- time graph of a body which is accelerating uniformly.	E 

1. (a) A (b) B (c) C (d) D (e) E
2. (a) A (b) B (c) C (d) D (e) E
3. (a) A (b) B (c) C (d) D (e) E
4. (a) A (b) B (c) C (d) D (e) E
5. (a) A (b) B (c) C (d) D (e) E

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ANSWER KEY

QN.NO	ANSWER KEY	QN.NO	ANSWER KEY
1	b	16	c
2	c	17	a
3	b	18	d
4	d	19	b
5	b	20	c
6	d	21	a
7	d	22	d
8	b	23	a

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9	**c**	**24**	**c**
10	**b**	**25**	**c**
11	**d**	**26) 1)**	**E**
12	**a**	**2)**	**D**
13	**d**	**3)**	**A**
14	**d**	**4)**	**B**
15	**b**	**5)**	**C**

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