SAT Physics Practice Paper 6

1) If a ball is thrown vertically upwards with speed u, the distance covered during the last t seconds of its, ascent is

    (a) 1/2 gt$_2$
    (b) ut
    (c) ut- 1/2 gt$_2$
    (d) (u + gt)t

2) A ball is thrown from height h and another from 2 h. The ratio of time taken by the two balls to reach ground is

    (a) $\sqrt{2}:1$

    (b) $1:\sqrt{2}$

    (c) 2:1
    (d) 1:2

3) A scooterist covers a distance of 6 km in 5 min. calculate the speed in mls.

    (a) 20 m/s
    (b) 40 m/s
    (c) 15m/s
    (d) 30 m/s

4) The ratio of SI units to CGS units of velocity is

    (a) 10$_{-2}$
    (b) 10$_2$
    (c) 10
    (d) 10$_{-1}$

5) The velocity of a particle increases from u to v in at during which it covers a distance s. If the particle uniform acceleration, which one of the following equations does not apply to the motion?

    (a) 2s=(v+u)t
    (b) $a=v-ut$

    (c) v$_2$=u$_2$-2as
    (d) s=(u+1/2 at)t

6) When a graph of one quantity versus another results in a straight line, the quantities are

    (a) Directly proportional
    (b) Constant
    (c) Inversely proportional

(d) Independent of each other

7) What is the SI unit of speed?

(a) km/h
(b) m/s
(c) m/min
(d) km/s

8) Km/h$_2$ is a unit of _____
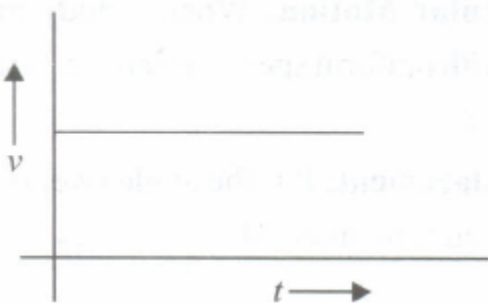
(a) Velocity
(b) Speed
(c) Acceleration
(d) Distance

9) Motion along a straight line is called ____ motion.

(a) Rectilinear motion
(b) Circular motion
(c) Oscillatory motion
(d) Parabolic

10) A car is moving with a speed of 36 km/h. Its speed in m/s is

(a) 10
(b) 100
(c) 2
(d) 1

11) From the given v - t graph, it can be inferred that the object is
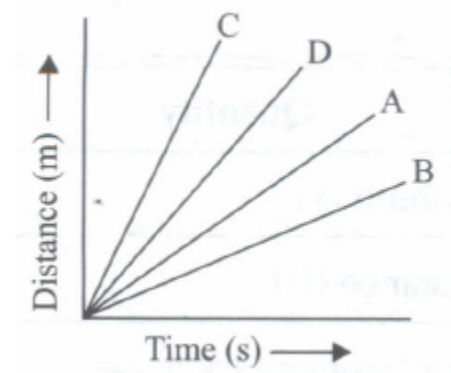

(a) in uniform motion
(b) at rest
(c) in non-uniform motion
(d) moving with uniform acceleration

12) Area under a v - t graph represents a physical quantity which has the unit

(a) m$_2$
(b) m

(c) m$_2$
(d) ms$_{-1}$

13) Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in Fig. Choose the correct statement


(a) Car A is faster than car D.
(b) Car B is the slowest.
(c) Car D is faster than car C.
(d) Car C is the slowest.

14) A body whose position with respect to surrounding does not change, is said to be in a state of:

(a) Rest
(b) Motion
(c) Vibration
(d) Osciliation

15) Examples of vector quantities are:

(a) velocity, length and mass
(b) speed, length and mass
(c) time, displacement and mass
(d) velocity, displacement and force

16) Time is an example of:

(a) Scalar
(b) Vector
(c) Scalar or vector
(d) Neither scalar nor vector

17) A speed:

(a) is always positive
(b) is always negative
(c) may be positive as well as negative
(d) is neither zero nor negative

18) Mere per second is not the unit of:

       (a) Speed
       (b) Velocity
       (c) Displacement
       (d) None of them

19) In figure BC represents a body moving:
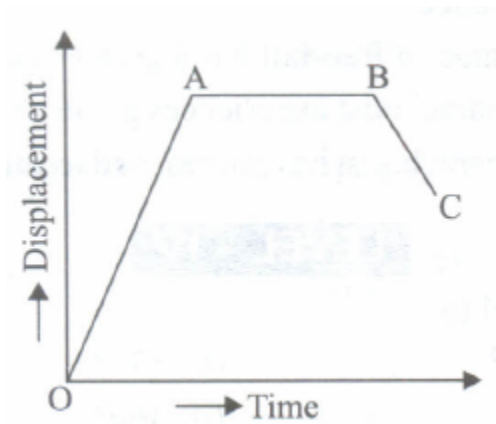
       (a) Backward with uniform velocity
       (b) Forward with uniform velocity
       (c) Backward with non-uniform velocity
       (d) Forward with non-uniform velocity

20) Five telegraph poles are positioned at equal distances along the side of a road.
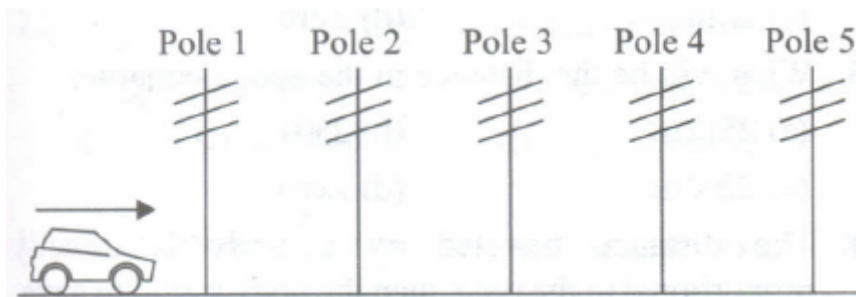
A car accelerates until it is level with pole 4. The car then continues along the road at a steady speed. The times taken to travel between one pole and the next are measured. Which time is the greatest?The time between

       (a) pole 1 and pole 2.
       (b) pole 2 and pole 3.
       (c) pole 3 and pole 4.
       (d) pole 4 and pole 5.

21) The following statements are about motion.

1. A plane flies due East for 600 km.

2. A runner's average speed in a race around a track is 5 m/s.

3. A snail crawls at 3 mm/s in a straight line towards a lettuce.

4. A tourist travels 500 km on a journey. Which statements describe vector quantities?

    (a) 1 and 2
    (b) 1 and 3
    (c) 2 and 3
    (d) 2 and 4

22) In a circular path of radius 1m, a mass of 2kg moves with a constant speed 10 ms^{-1}. The angular speed in radian/sec, is:

    (a) 5
    (b) 10
    (c) 15
    (d) 20

23) The relationship between average speed, time and distance is

    (a) Average speed = distance time
    (b) Average speed $= total distance total time$

    (c) Time = average speed/distance
    (d) Distance = average speed time

24) A particle revolves around a circular path. The acceleration of the particle is

    (a) along the circumference of the circle
    (b) along the tangent
    (c) along the radius
    (d) zero

25) Which of the following is not an example of linear motion

    (a) a book at rest
    (b) a body in uniform circular motion
    (c) wheel rotating at uniform speed on road
    (d) a body roiling down an inclined plane

26) The velocity of a body increases for some time, then remains constant and then decreases until it comes to rest. When velocity is plotted against time, the figure obtained is

    (a) straight line
    (b) circle
    (c) trapezium
    (d) square

27) Area under the velocity-time graph gives

(a) the time taken by a moving object
(b) the distance travelled by a moving object
(c) the acceleration of a moving object
(d) none of the above

28) A particle experiences constant acceleration for 20 s after starting from rest. If it travels a distance S_1 in the first 10 second and a distance S_2 in the next 10 second, then

(a) $S_2 = 2S_1$
(b) $S_2 = 3S_1$
(c) $S_2 = 4S_1$
(d) $S_2 = 5S_1$

29) A body falling under gravity moves with uniform:

(a) speed
(b) velocity
(c) momentum
(d) acceleration

30) A stone is dropped into a lake from a tower 500 m high. The sound of the splash will be heard by a man on the tower after

(a) 21 s
(b) 10 s
(c) 11.5 s
(d) 14 s