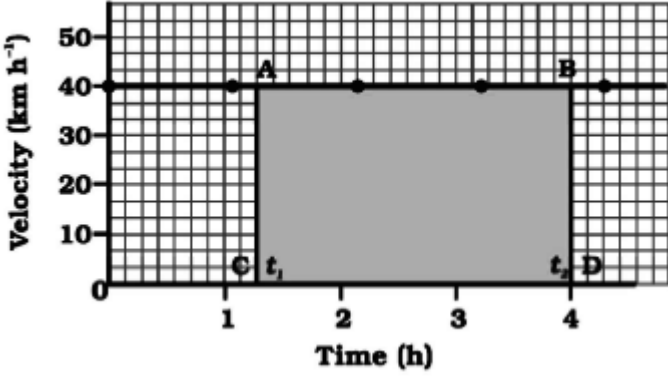
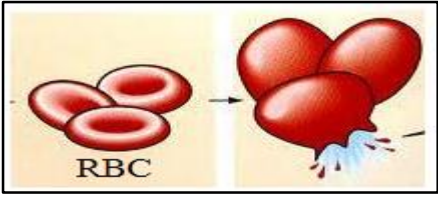
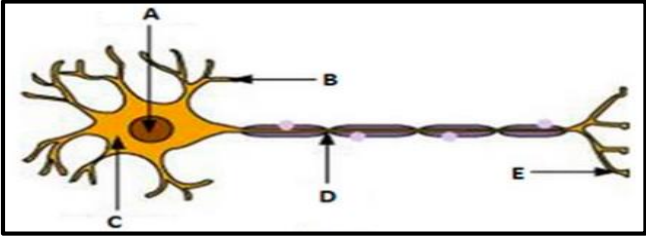


INDIAN SCHOOL AL WADI AL KABIR  
DEPARTMENT OF SCIENCE 2021 - 22  
Class-IX - SCIENCE  
MIDTERM QUESTION PAPER  
SET I

S.NO.	QUESTIONS
1	<p>Sita is enjoying a ride on a merry-go-round which is moving with a constant speed of <math>15 \text{ ms}^{-1}</math>. It implies that she is</p> <p>(a) at rest (b) moving with no acceleration (c) in accelerated motion (d) moving with uniform velocity</p>
2	<p>Choose the correct option</p> <p>(a) distance is a scalar, velocity is a vector, acceleration is a vector (b) distance is a vector, velocity is a scalar, acceleration is a vector (c) distance is a vector, velocity is a vector, acceleration is a vector (d) distance is a scalar, velocity is a vector, acceleration is a scalar</p>
3	<p>The following graph represents</p>  <p>(a) the body is at rest (b) the body is moving with uniform velocity (c) the body is moving with uniform acceleration (d) the body is moving with a variable acceleration</p>
4	<p>When a car at high speed makes a sharp turn, the driver in a car tends to get thrown to the side opposite to the turn. This is due to the</p> <p>(a) inertia of motion (b) inertia of time (c) inertia of rest (d) inertia of direction</p>
5	<p>Anil has bacterial infection. Which part of the cell will help him eliminate bacteria from his body and how?</p> <p>(a) Vacuoles as they can uptake any material and store it. (b) Vacuoles as they can expel substance out of the cell. (c) Lysosomes as they have digestive enzymes to breakdown foreign material.</p>

	(d) Lysosomes as they can destroy their own cell.								
6	<p>Observe the figure given below. Identify the solution in which these red blood cells are placed.</p>  <p>(a) Isotonic solution  (b) Hypotonic solution  (c) Hypertonic solution  (d) None of these</p>								
7	<p>In plants, cells in the leaves mainly make food for the plant. Which organelle do these cells have that enables them to make food?</p> <p>(a) These cells have plastids with pigment chlorophyll that helps photosynthesise.  (b) These cells have mitochondria that provides ATP as energy to photosynthesise.  (c) These cells have colourless plastids that absorb sunlight to help plant photosynthesise.  (d) These cells have vacuoles that provide essential nutrients required for photosynthesis.</p>								
8	<p>Which of the following is not a function of vacuole?</p> <p>(a) Storage of sugars, amino acids and proteins.  (b) Providing rigidity and turgidity to the cell.  (c) Excretion of waste from unicellular organisms.  (d) Locomotion</p>								
9	<p>Which of the following statements is correct about the cell shown in the figure?</p>  <p>(a) These cells are highly specialised to receive stimuli and transmit messages within our body.  (b) Brain, spinal cord and nerves are not composed of this tissue.  (c) Each of this tissue has a single long part, called the dendrite, and many short, branched parts called axons.  (d) A receives nerve impulse from D and transmits it to other cells.</p>								
10	<p>Match the tissues in column I with its functions in column II</p> <table border="1" data-bbox="384 1888 1270 1993"> <thead> <tr> <th colspan="2">Column I</th> <th colspan="2">Column II</th> </tr> </thead> <tbody> <tr> <td>(A)</td> <td>Parenchyma</td> <td>(p)</td> <td>Water transport</td> </tr> </tbody> </table>	Column I		Column II		(A)	Parenchyma	(p)	Water transport
Column I		Column II							
(A)	Parenchyma	(p)	Water transport						

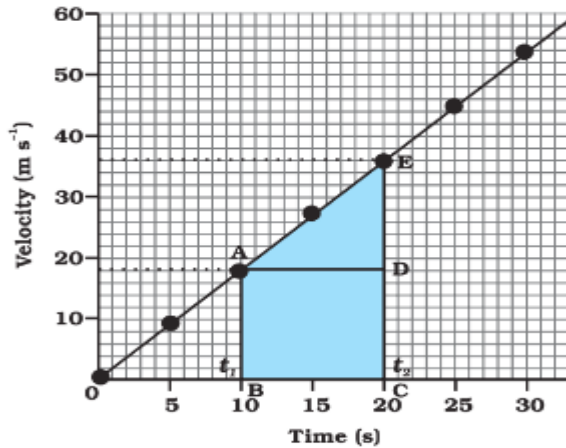
	<table border="1"> <tbody> <tr> <td>(B)</td> <td>Sclerenchyma</td> <td>(q)</td> <td>Provides buoyancy to aquatic plants</td> </tr> <tr> <td>(C)</td> <td>Tracheids</td> <td>(r)</td> <td>Storage of food</td> </tr> <tr> <td>(D)</td> <td>Aerenchyma</td> <td>(s)</td> <td>Mechanical strength</td> </tr> </tbody> </table> <p>(a) A— s, B — r, C— q, D — p            (b) A— r, B — s, C— p, D — q            (c) A— p, B— q, C— r, D — s            (d) A— q, B — r, C— q, D — p</p>	(B)	Sclerenchyma	(q)	Provides buoyancy to aquatic plants	(C)	Tracheids	(r)	Storage of food	(D)	Aerenchyma	(s)	Mechanical strength
(B)	Sclerenchyma	(q)	Provides buoyancy to aquatic plants										
(C)	Tracheids	(r)	Storage of food										
(D)	Aerenchyma	(s)	Mechanical strength										
11	<p>Which of the following statements are true for pure substances?</p> <p>(i) Pure substances contain only one kind of particles.            (ii) Pure substances may be compounds or mixtures.            (iii) Pure substances have the same composition throughout.            (iv) Pure substances can be exemplified by all elements other than nickel.</p> <p>(a) (i) and (ii)            (b) (i) and (iii)            (c) (iii) and (iv)            (d) (ii) and (iii)</p>												
12	<p>Which of the following does not have a fixed melting point/boiling point?</p> <p>(a) gold      (b) iron      (c) air      (d) oxygen</p>												
13	<p>Two chemical substances X and Y combine together to form a product P, which contains both X and Y.</p> $X + Y \rightarrow P$ <p>X and Y cannot be broken down into simpler substances by simple chemical reactions. Which of the following statements concerning X, Y and P are correct?</p> <p>(i) P is a compound            (ii) X and Y are compounds            (iii) X and Y are elements            (iv) P has a fixed composition</p> <p>(a) (i), (ii) and (iii)            (b) (i), (ii) and (iv)            (c) (ii), (iii) and (iv)            (d) (i), (iii) and (iv)</p>												
14	<p>On the basis of composition of matter, milk is considered to be:-</p> <p>(a) A pure substance            (b) An impure substance            (c) An element            (d) A compound</p>												
	<b>ASSERTION- REASON QUESTIONS</b>												
15	<p>Assertion: The forces are said to be balanced, if net force is zero</p>												

	Reason: Balanced force is responsible for change in position or state of an object
16	Assertion: A man jumping out of a moving train fall with his head forward due to inertia of motion Reason: The tendency of an object to resist any change in its state of uniform motion is the inertia of motion.
17	Assertion: An object may have acceleration even if it is moving with constant speed Reason: An object may be moving with uniform velocity but it may be changing its direction of motion.
18	Assertion (A): Epithelial cells present in skin is water-proof and highly resistant to mechanical injury. Reason(R): Surface of skin is covered by stratified cuboidal epithelium.
19	Assertion (A): The endoplasmic reticulum which lacks ribosomes is called rough endoplasmic reticulum. Reason(R): RER is mainly involved in synthesis of proteins.
20	Assertion (A): Most of plant tissues are dead and are supportive in nature. Reason(R): Plants being stationary in nature the dead cells in them provide mechanical strength more easily than live cells and need less maintenance.
21	Assertion: - A compound is heterogeneous in nature Reason:-A compound contains different elements in a fixed ratio.
22	Assertion:- Although ice, water and water vapour all look different and display different physical properties, they are chemically the same. Reason:- Chemical changes are permanent, irreversible and a new substance is produced.  ANS- (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
23	Assertion:- All the constituent particles of a pure substance are the same in their chemical nature. Reason:-Pure substances may be homogeneous or heterogeneous

### CASE STUDY QUESTION

The variation in velocity with time for an object moving in a straight line can be represented by a velocity-time graph. In this graph, time is represented along the x-axis and the velocity is represented along the y-axis.

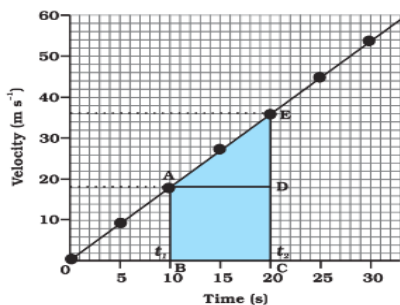
The following case is the velocity-time graph for the motion of a car. The nature of the graph shows that velocity changes by equal amounts in equal intervals of time. Thus, for all uniformly accelerated motion, the velocity-time graph is a straight line.



24 What does the slope of velocity-time give?

- (a) distance
- (b) acceleration
- (c) force
- (d) velocity

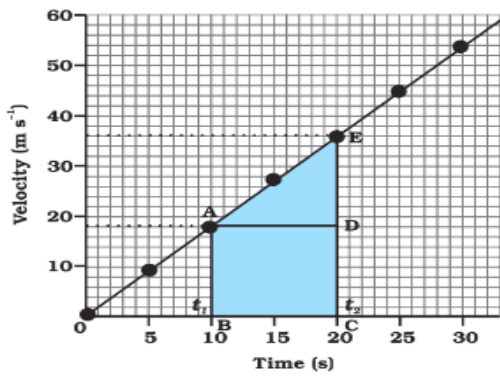
25



In the graph shown the car is moving with:

- (a) constant acceleration
- (b) zero velocity
- (c) variable acceleration
- (d) zero acceleration

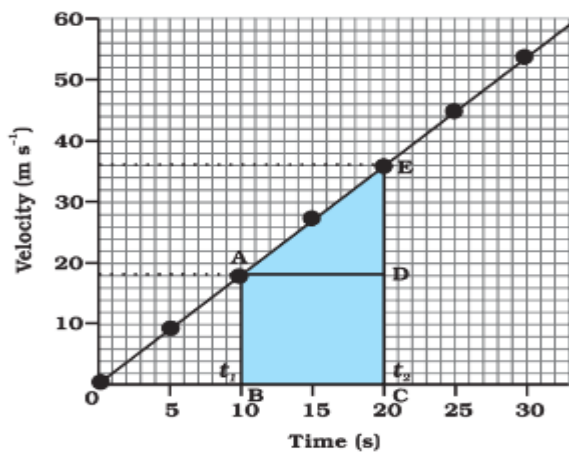
26



The initial velocity of a body is  $u$ . It is under uniform acceleration  $a$ . Its velocity  $v$  at any time  $t$  is given by

- (a)  $v = u + at^2$
- (b)  $v = u + \frac{1}{2}at^2$
- (c)  $v = u + at$
- (d)  $v = u$

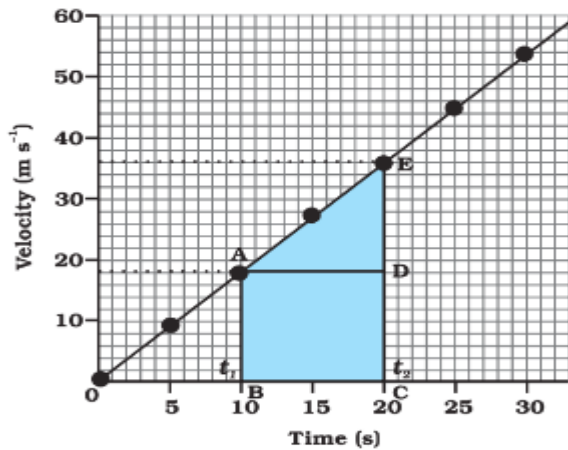
27



The velocity of the car at point E is

- (a) 36m/s
- (b) 20m/s
- (c) 40m/s
- (d) 50m/s

28



Find the distance covered by the body during the interval from 10s to 20s

- (a) 200m
- (b) 270m
- (c) 360m
- (d) 400m

**Case Study Based**

The muscular system is composed of specialised cells called muscle fibres. Their predominant function is contractibility i.e., it can be stretch and return to its original size and shape. The cells of muscle tissue are capable of contraction due to the presence of contractile proteins. Muscle tissue is easily distinguishable by its highly organised bundles of cells. The parallel arrangement of these fibres allows them to work together efficiently. The three types of muscular tissues can be distinguished by both their locations and their microscopic features. Microscopic view of cardiac muscles show features which are cylindrical in nature, uninucleated and with branches. Heart muscles show periodic contraction and relaxation throughout life. Skeletal muscle consists of long multinucleated fibres which are also voluntary in nature and help in body movement. The fibres are relatively wide and very long, but unbranched. There are alternating dark and light bands perpendicular to the edge of the fibre that are present all along the fibre. Smooth muscle is found in the walls of internal organs, such as the organs of the digestive tract, blood vessels, and others. It consists of uninucleated fibres which are elongated or spindle shaped.

29

The involuntary muscle which shows rhythmic contraction and relaxation and work tirelessly

- throughout our life time:
- (a) Spindle shaped muscle fibres
  - (b) Striated muscle fibres
  - (c) Cardiac muscle fibres
  - (d) Skeletal muscle fibres

30

Muscle fibres which are uninucleated and spindle shaped are features of:

	<ul style="list-style-type: none"> <li>(a) Cardiac muscle fibres</li> <li>(b) Striated muscle fibres</li> <li>(c) Smooth muscle fibres</li> <li>(d) Skeletal muscle fibres</li> </ul>
31	<p>While doing work and running, you move your organ such as hands, legs etc., which among the following is correct?</p> <ul style="list-style-type: none"> <li>(a) Smooth muscles contract and pull the ligament to move the bones.</li> <li>(b) Smooth muscles contract and pull the tendons to move the bones.</li> <li>(c) Skeletal muscles contract and pull the ligament to move the bones.</li> <li>(d) Skeletal muscles contract and pull the tendon to move the bones.</li> </ul>
32	<p>The special property of muscle fibres to stretch and return to its original size and shape is called:</p> <ul style="list-style-type: none"> <li>(a) Excitability</li> <li>(b) Contractibility</li> <li>(c) Flexibility</li> <li>(d) None of the above</li> </ul>
33	<p>Cardiac muscle fibres possess the following features:</p> <ul style="list-style-type: none"> <li>(a) Elongated with pointed ends, branched and uninucleated.</li> <li>(b) Cylindrical, branched and multinucleated</li> <li>(c) Cylindrical, unbranched and uninucleated</li> <li>(d) Cylindrical, branched and uninucleated</li> </ul>
	<p>The elements can be classified as <i>metals</i>, <i>non-metals</i>, and <i>metalloids</i>. Metals are good conductors of heat and electricity, and are malleable and ductile. Most of the metals are solids at room temperature, with a characteristic silvery shine. Non-metals are (usually) poor conductors of heat and electricity, and are not malleable or ductile; many of the elemental non-metals are gases at room temperature, while others are liquids or solids. The metalloids are intermediate in their properties.</p>
34	<p>The elements which normally exist in the liquid state are:-</p> <ul style="list-style-type: none"> <li>(a) Bromine and iodine</li> <li>(b) Mercury and chlorine</li> <li>(c) Iodine and mercury</li> <li>(d) Bromine and mercury</li> </ul>
35	<p>The element which has no fixed shape is:</p> <ul style="list-style-type: none"> <li>(a) Sodium</li> <li>(b) Oxygen</li> <li>(c) Silver</li> <li>(d) Aluminium</li> </ul>
36	<p>Which one of the following is not a metalloid?</p> <ul style="list-style-type: none"> <li>(a) Boron</li> <li>(b) Silicon</li> <li>(c) Hydrogen</li> <li>(d) Germanium</li> </ul>



37	One of the following substances is a good conductor of electricity. This substance is: (a) Copper (b) Iodine (c) Hydrogen (d) Oxygen
38	Which of the following are metals? (i) Sodium (ii) Carbon (iii) Copper (iv) Iodine (v) Silicon  (a) (i), (ii) and (iv) (b) (i) and (iii) (c) (ii), (iv) and (v) (d) (iv) and (v)
<b>NUMERICAL BASED QUESTIONS</b>	
39	A bus accelerates uniformly from $18 \text{ km h}^{-1}$ to $36 \text{ km h}^{-1}$ in 5 s. Find the distance covered by the bus in that time. (a) 37.5m (b) 25m (c) 12.5m (d) 75m
40	An athlete completes one round of a circular track of diameter 200 m in 40 s. What will be the distance covered and the displacement at the end of 2 minutes 20 s respectively? (a) 3500m, 100m (b) 2200m, 200m (c) 1000m, 200m (d) 1500m, 100m

**ANSWER KEY \_ SET-1**

<b>1. c</b>	<b>2. a</b>	<b>3. b</b>	<b>4. d</b>	<b>5. c</b>	<b>6. b</b>	<b>7. a</b>	<b>8. d</b>
<b>9. a</b>	<b>10. b</b>	<b>11. b</b>	<b>12. c</b>	<b>13. d</b>	<b>14. b</b>	<b>15. c</b>	<b>16. a</b>
<b>17. c</b>	<b>18. c</b>	<b>19. c</b>	<b>20. a</b>	<b>21. d</b>	<b>22. b</b>	<b>23. c</b>	<b>24. b</b>
<b>25. a</b>	<b>26. c</b>	<b>27. a</b>	<b>28. b</b>	<b>29. c</b>	<b>30. c</b>	<b>31. d</b>	<b>32. b</b>
<b>33. d</b>	<b>34. d</b>	<b>35. b</b>	<b>36. c</b>	<b>37. a</b>	<b>38. b</b>	<b>39. a</b>	<b>40. b</b>

**CHECKED BY : HOD - SCIENCE**