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| ANSWER KEY | | | | | |
| No. | | | QUESTIONS | | MARKS |
| **SECTION A** | | | | | |
| 1 | | | a. Iron | |  |
| 2 | | | 1. acceleration of a particle | | 1 |
| 3 | | | (a) To suit their function | | 1 |
| 4 | | | | A is true but R is false. | 1 |
| 5 | | | | A is true, but R is false. | 1 |
| 6 | | | | Both Assertion and Reason are true and Reason is not the correct explanation of the Assertion. | 1 |
| **SECTION B** | | | | | |
| 7 | Metal  Any two properties | | | | 1  2 |
| 8 | (a) zero and 77.5 km/h  (b) after 40 minutes  (c) 65 km | | | | 1  1  1 |
| 9 | 1. Cell is a fundamental, structural and functional unit of living organisms and basic unit of life. 2. Cells make tissues, tissues together make organ, organs make organ system and organ systems make body of organisms. So cell is called structural unit of life. All the basic functions of the body like respiration, excretion etc. are carried out by cell through its cell organelles, so cell is called functional unit of life. 3. All organisms are made up of cell, cell is the basic unit of life, all cells arise from pre-existing cells. | | | | 1  1  1 |
| **SECTION C** | | | | | |
| 10 | | | | Classify the following as physical and chemical change.  a. Physical change  b. Chemical change  c. Physical change  d. Chemical change  **OR**  Difference between element and compound  Any suitable example | ½  ½  ½  ½  1  1 |
| 11 | | | | Cell wall provides structural strength to the plants, it also enables plants, fungi and bacteria to exist in hypotonic solution without bursting.  **OR**  Cell membrane is elastic living membrane made up of lipids and proteins, whereas cell wall is a rigid nonliving covering made up of cellulose.  Cell membrane acts as semi permeable membrane which allows only selective substances to pass through it. Cell wall provides rigidity and protection to cell and it is permeable. | 2 |
| 12 | | | | Distance covered = 4460-4200 = 260 km  Time = 4 h 20 min = 13/3 h  Average speed = total distance/total time  = 260/(13/3) = 60 km/h  = 60(5/18) = 16.67 m/s | ½  ½  ½  ½ |
| **SECTION D** | | | | | |
| 13 | **(i)any two distinctions**  **(ii)** u= initial velocity=36 km/h = 10 m/s  v= final velocity = 72 km/h = 20 m/s  t= time = 4 s  a = v – u/t  a = 20 – 10/4  a = 2.5 m/s2  **OR**  (a)  the condition in which a body travels the same displacement in the same amount of time  (b)  acceleration is the rate of change of the velocity of an object with respect to time, SI unit = m/s2  (c) Average speed is defined as the total distance travelled by the body in total time | | | | ½ mark each  ½  ½  ½  ½  1  1  1 |
| 14 | | a. Pure substances are made up of only same type of particles  b. Any two points of difference | | | 1  2 |
| 15 | | a) Dried raisins placed in plain water will swell due to endosmosis, whereas fresh grapes placed in concentrated sugar solution will shrink due to exosmosis.  b) If the medium has exactly the same water concentration as the cell, then this solution is called **isotonic solution.**  **OR**  a) When a living plant cell loses water through osmosis (in hypertonic solution) there is shrinkage or contraction of the contents of the cell away from the cell wall. Such a cell is said to be plamolysed cell and the phenomenon is known as plasmolysis.  b) If a cell showing plasmolysis is kept in a hypotonic solution, the cell reverts to its normal condition. This is called de-plasmolysis.  c) The cells and cell organelles are destroyed by heating and boiling up furthers, there will be no more [osmosis](https://byjus.com/biology/osmosis/) after sugar syrup is added and also there is no plasmolysis process. | | | 2  1  1  1  1 |