

SUMMATIVE ASSESSMENT - I, 2016-17

SCIENCE

Class - IX

Set - A

Time Allowed : 3 hours

Maximum Marks : 90

General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section-A and all questions of Section-B are to be attempted separately.
4. Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence
5. Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
9. Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of two marks.

SECTION-A

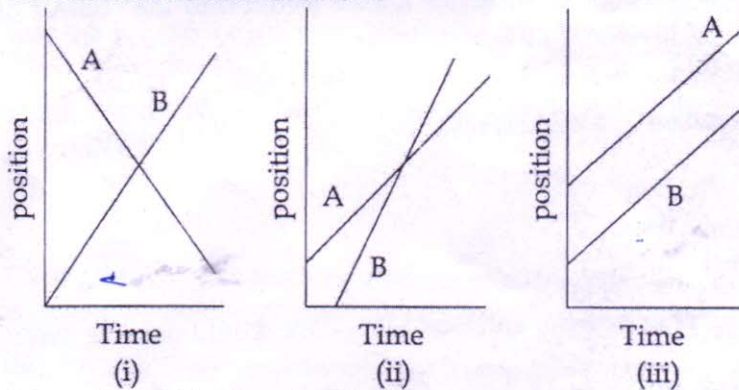
- 1 Name the phenomenon that results in the swelling of human red blood cells when they are placed in hypotonic salt / sugar solution. 1
- 2 An object travels a distance of 18 m in 4 s and then another 18 m in 2 s. What is the average speed of the object? 1
- 3 If mass of a body is doubled, what will be the effect on its acceleration under the action of certain given force? 1
- 4 Rohit added small amount of common salt to water taken in a graduated cylinder. On dissolution there was no detectable change in the level of water. Explain why is it so? 2
- 5 Differentiate between simple tissue and complex tissues in plants. 2
- 6 (a) State Universal law of Gravitation. 2
(b) Using the formula for 'G', find its SI unit.
- 7 Draw a flow chart diagram to show the process of obtaining different gases from air. 3

- 8 What is evaporation? How does the rate of evaporation depend on the speed of wind? Explain with the help of an example. 3
- 9 Define an element. Classify the elements into three categories on the basis of their properties. 3
- 10 Do all cells in our body look alike in terms of shape, size and structure? Explain with the help of examples. What similarities do they have? 3
- 11 (a) Blood is called a fluid connective tissue? State reason. 3
 (b) Name the various components of blood.
 (c) State the main function of blood.
- 12 A girl of mass 50 kg jumps out of a moving boat of mass 300 kg on to the bank with a horizontal velocity of 3 m/s. With what velocity will the boat begin to move backwards? 3
- 13 (i) List two differences between mass and weight of a body. 3
 (ii) Can a body has mass, but no weight? Give reasons for your answer.
- 14 (a) Draw a graph between distance and time for a car moving with non-uniform speed. 3
 (b) A body is accelerating at a constant rate of 10 ms^{-2} . If the body starts from rest, how much distance will it cover in 2 s?
- 15 State Newton's first law of motion. Give its two examples. Why is it called law of inertia? Explain why it is easier to push an empty box than a box full of books? 3
- 16 Mona weighs 750 N on Earth. 3
 (i) On the planet Mars, the force of gravity is 38% of that of Earth. How much will Mona weigh on Mars?
 (ii) What will be Mona's mass on Earth ($g = 10 \text{ m/s}^2$)?
- 17 Although the people of Nangal village did not know about genetic manipulation but they knew that some seeds are available which could be grown in diverse climatic conditions. So they approached the district agriculture section for getting the seeds, but were still hesitant to use them. Mitesh explained to them the importance of variety improvement and encouraged them to interact with government agencies more often. 3
 (i) How can seeds with genetic manipulation be developed?
 (ii) State two major factors for which variety improvement is done.
 (iii) How do you think farmers can be benefitted if they interact with government agencies more often?
- 18 Mention the fresh water and brackish water resources for fish culture. 3
- 19 List four points to prove that tincture of iodine is a true solution. Mention the solute and the solvent in tincture of iodine. 5
- 20 (a) Illustrate an activity to demonstrate that particles of matter have spaces between them. 5
 (b) Explain why a diver is able to cut through water in a swimming pool.
- 21 Define osmosis. What would happen to a living cell when it is kept in : 5
 (a) an isotonic solution
 (b) a hypotonic solution
 (c) a hypertonic solution

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 19
 x 15

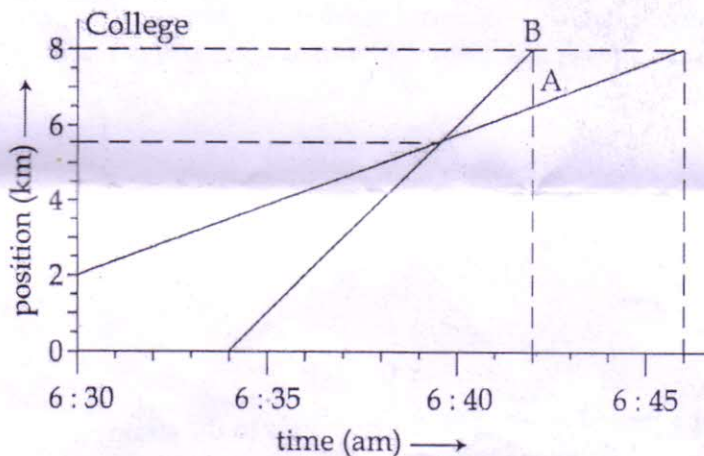
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22 The position-time graphs of two objects A and B in three different situations for a particular duration are as shown below. 5



- (a) In which situation the distance between them will remain same ?
 (b) In which situation they are moving in opposite directions?
 (c) Are they crossing each other in any situation (s)? If so, how is it possible?

23 The position-time graph for two students A and B going from their home to their college is as shown above : 5



- (a) Who lives closer to the college?
 (b) Who starts for the college earlier and at what time?
 (c) Whose speed is more?
 (d) Who reaches college earlier and at what time?
 (e) Do they cross each other on the way to college? If so where?

24 Define crop rotation. How is it done to increase the yield of crops? Why is this process called environment friendly? 5

SECTION - B

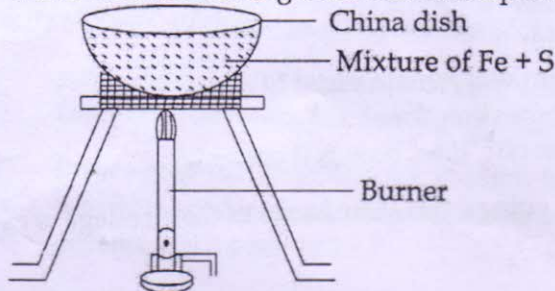
25 The yellow coloured adulterant used in arhar dal to give it shiny look and hence to increase the profit is : 1

- (a) yellow powder (b) turmeric powder
 (c) Metanil yellow (d) iodine powder

- 26 Four test tubes were marked as A, B, C and D. Test tube A had salt, B had sugar, C had chalk powder and D had sago powder. On adding two drops of iodine solution to the content of each test tube, the one which turns blue black will be : 1
- (a) A (b) B (c) C (d) D

- 27 Iron filings and sulphur powder are mixed in a beaker, resulting mixture will undergo : 1
- (a) Chemical change
(b) Physical change
(c) Initially physical then chemical
(d) Initially chemical then physical

- 28 When we start heating a mixture of sulphur powder and iron filings, we would observe that : 1



- (a) sulphur starts melting
(b) iron filings start melting
(c) mixture becomes red hot
(d) mixture evaporates
- 29 When we burn magnesium ribbon in air a white powder is obtained. It is : 1
- (a) magnesium oxide
(b) magnesium carbonate
(c) magnesium hydroxide
(d) magnesium chloride

- 30 A student used a red stain for mounting a peel of onion. This corresponds to the stain : 1
- (a) Acetocarmine (b) Methylene blue
(c) Safranin (d) Iodine

- 31 The characteristic feature for identification of sclerenchyma is : 1
- (a) large intercellular spaces
(b) isodiametric
(c) thick wall due to lignin
(d) thickening at corners due to pectin and cellulose

- 32 The technique of sublimation is used to separate : 1
- (a) Two non-volatile substance.
(b) Two volatile substances.
(c) Such solid substance which sublimes on heating from the non volatile substance.
(d) Two solid substances which melt on heating.

33 A student uses a spring balance of least count 0.5 gwt to measure minimum force required to just move a wooden block on a surface. He holds the spring balance vertically and observes that the pointer of the spring balance is at 3rd division above the zero mark on the scale. He then pulled the block with this spring balance by increasing the pull gradually and when the pointer is at 38th division, the block just starts moving. He calculates the force. Its correct value will be :

- (a) 38 gwt (b) 20.5 gwt
(c) 19.0 gwt (d) 17.5 gwt

34 If you take gum and make an aqueous solution, What kind of solution is likely to be formed ? What would be the observation on passing a beam of light through the solution ?

35 Kaushal learnt how to determine the boiling point of water in his school laboratory. When he went to Leh in summer vacations he found that there the water boiled at a temperature lower than the boiling point he observed in his school laboratory. How would you explain this?

36 A student took x gram water in a beaker and dipped p gram of raisins in it. After keeping raisins in water for about 2 hours he measured the mass of soaked raisins as q grams. He also measured the mass of water left in the beaker which was y grams. On the basis of his observations write the correct formula to find the percentage of water absorbed by raisins. Mention the process due to which weight of raisins increase ?