

SECTION-A

- 1/ ✓ What are the functional segments of DNA called? 1
- 2/ ✓ Give an example of a motion in which acceleration is uniform. 1
- 3/ ✓ How are action - reaction forces related in magnitude and direction? 1
- 4/ ✓ Which will cause more severe burns steam or boiling water at the same temperature and why? 2
- 5/ ✓ Name the four substances stored in vacuoles. 2
- 6/ ✓ State the Universal law of gravitation. Newton Name the scientist who gave this law. 2
- 7/ ✓ Distinguish between a suspension and a colloidal solution in two ways a tabular form giving one example each. 3
- 8/ ✓ List three characteristics of particulate nature of matter. 3
- 9/ ✓ (a) Name a technique to separate a mixture of two or more miscible liquids for which difference in boiling points is less than 25 k. 3
 (b) Describe the structure of the column and used in the above technique. Why is it used?
- 10/ ✓ Name the following and give one characteristic of each. 3
 (a) Living tissue that provides mechanical support in plants.
 (b) Highly specialised cells for being stimulated and then transmitting the stimulus very rapidly within the body of animals.
 (c) Animal tissue with elongated cells and contractile proteins responsible for movement.

- 11 (a) Mention different types of blood cells. 3
(b) Which substances are transported by blood?
- 12 State reason for the following : 3
(i) A person is hit harder, when he falls on a hard floor than when he falls on sand or cotton.
(ii) A gunman gets jerk in backward direction while firing a gun
(iii) A bullet fired on a glass window makes a fine hole while a stone smashes when hits it.
- 13 A boy travels 3 km north and then 4 km east. What will be : 3
(a) the distance travelled by him ?
(b) the minimum distance he needs to go to get back to where he started ?
(c) the direction of his displacement ?
- 14 A boy on a cliff 19.6 m high drops a stone. One second later, he throws a second stone 3
after the first. They both hit the ground at the same time. With what speed did he throw the second stone?
- 15 Define uniform speed and uniform acceleration. 3
The train 'A' travelled a distance of 120 km in 3 hours whereas another train B travelled a distance of 180 km in 4 hours. Which train travelled faster.

16

Explain three applications of conservation of momentum.

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17

When Rachit went with his sister to a green grocer who immediately started telling the rates of "desi-kheera", "desi-gobhi", "desi-tamatar etc. Rachit's sister was surprised to find these vegetables available in summer. Rachit Explain how it is possible to get cauliflower, peas and carrot in summer.

3

(i) What do we call the vegetables available with the green grocer which are not "desi"?

(ii) Give two reasons which are responsible for availability of non-seasonal fruits and vegetables in the market.

(iii) Mention any two values of Rachit that lead him to satisfy queries of his sister.

18

Differentiate between "Mariculture" and "Aquaculture"?

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19

(a) Explain the term density. Arrange different states of matter in increasing order of density.

5

(b) Explain how ice floats on water.

20

Write your observations when the following processes take place

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(a) an aqueous solution of sugar is heated to dryness.

(b) a saturated solution of potassium chloride prepared at 60°C is allowed to cool at room temperature.

(c) a mixture of iron filings and sulphur powder is heated strongly.

(d) A beam of light is passed through a colloidal solution.

(e) dil - HCl is added to the mixture of iron and sulphur.

21

(a) Analyse the reason behind the following statements:

5

(i) Epidermis is thicker in desert plants though it is usually single layered

(ii) Presence of waxy layer (secreted by epidermis, on the outer surface of plants.

(b) Discuss the cell arrangement which supports the fact that epidermis is a protective tissue.

- 22 (a) Define 'g' and 'G'. Also establish a relation between the two. 5
(b) Write the units of 'g' and 'G'
(c) Which force accelerates a body in free fall?
- 23 (a) Write the equations of motion of an object when it is thrown vertically upward. 5
(b) Which force accelerates a body during this motion?
(c) What is the average value of 'g' on earth.
- 24 Classify the following crops as Rabi and Kharif crop: 5
(a) Wheat (b) Gram
(c) Paddy (d) Soyabean
(e) Maize (f) Cotton.

Out of Rabi and Kharif crops which one needs more water for irrigation? Compare Rabi and Kharif crops on the basis of their harvesting time.

SECTION - B

- 25 The food material and the reagent which can be used to show the presence of an adulterant metanil yellow are : 1
- (a) Coriander powder and Iodine solution
(b) Potato extract and iodine solution
(c) Yellow Dal and safranin
(d) Yellow Dal and conc. hydrochloric acid

26 Four food samples A, B, C and D were treated with iodine solution and conc. HCl separately. A and C showed blue-black and pink colour respectively. The conclusion drawn is :

- (a) A contains starch, C contain metanil yellow, while B and D are unknown.
- (b) A and C contain starch, B and D contain sugar.
- (c) A and C contain metanil yellow, B and D contain starch.
- (d) C contains starch, A contains metanil yellow, while B and D are unknown.

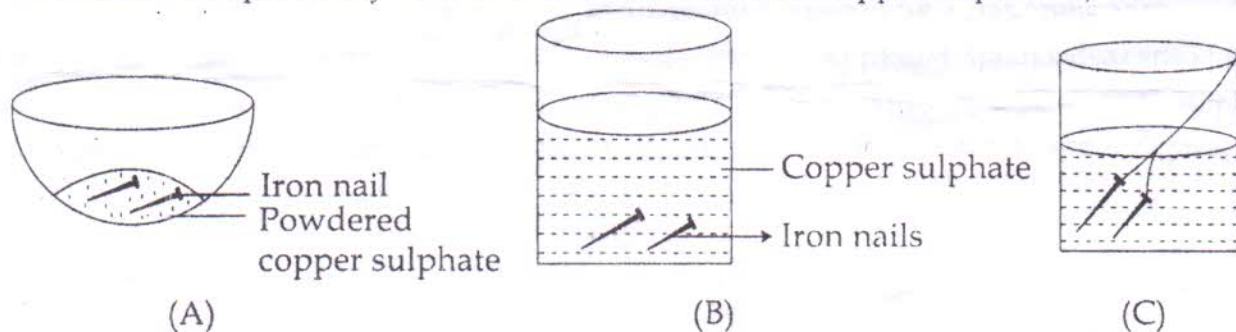
27 In a china dish, when iron filings and sulphur powder are mixed together, then : 1

- (a) A homogeneous mixture is formed.
- (b) A heterogeneous mixture is formed.
- (c) A compound is formed.
- (d) Physical properties of Iron and Sulphur are changed.

28 When Iron filings and sulphur powder are heated strongly in a china dish, then it forms : 1

- (a) an element
- (b) a compound
- (c) homogeneous mixture
- (d) heterogeneous mixture

29 The correct set up to study the reaction between iron and copper sulphate is/are : 1



- (a) (A)
- (b) (B)
- (c) (A) and (B) both
- (d) (B) and (C) both

- 30 A teacher made temporary mounts of human cheek cells and onion peel for evaluation of a class. The correct identifying features given by the students for cheek cells and onion peel cells respectively would be : 1
- (a) Blue stain, cell wall present; Pink stain, cell wall absent
 - (b) Blue stain, no vacuoles; pink stain, vacuole present in the centre
 - (c) Pink stain, cell wall absent; Blue stain, cell wall present
 - (d) Pink stain, cell wall present; Blue stain, cell wall absent
- 31 The given slide was identified as Parenchyma tissue by a student. The cell must : 1
- (a) have thick cell walls
 - (b) be non-nucleated
 - (c) have thickened corners
 - (d) have thin cell walls with inner cellular spaces
- 32 Which of the following substance cannot be separated by the method of sublimation : 1
- (a) sodium chloride
 - (b) ammonium chloride
 - (c) camphor
 - (d) iodine
- 33 Newton's second law of motion helps to determine : 1
- (a) Magnitude of force
 - (b) Definition of force
 - (c) Magnitude of velocity
 - (d) Definition of velocity
- 34 A mixture of sand, powdered glass and common salt is dissolved in water and then filtered. Name the substance left on filter paper. Name the substance in the filtrate. 2
- 35 In an experiment to determine the melting point of ice in laboratory, what form of ice should be preferably used? When should the reading of thermometer be noted? 2
- 36 While doing an experiment to find out the percentage of water absorbed by raisins a student recorded the mass of dry raisins as 4.0g and mass of raisins after soaking in water as 7.0g. Calculate the percentage of water absorbed by raisins. 2