

MIS

## SUMMATIVE ASSESSMENT - I, 2015-16

SCIENCE

Class - IX

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

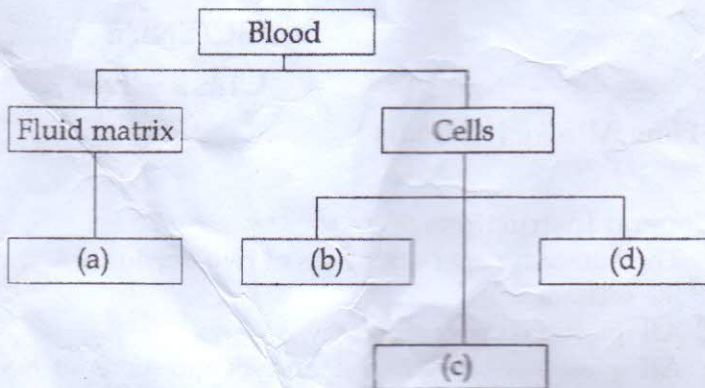
- 1 Name the tissue which is responsible for increase in girth of the stem and root. (1) 1
- 2 Give an example of a motion in which acceleration is against the direction of motion of an object. 1
- 3 On which physical quantity does the inertia of an object depend ? 1
- 4 What is chromatography ? Write its any two applications. (1) 2



5

Mention the different components of blood in the following diagram ?

2



6

A cricket ball thrown vertically upwards, reaches a maximum height of 5 metres. Find the initial speed of the ball. ( $g=9.8 \text{ ms}^{-2}$ )

2

7

Three different mixtures in water are prepared using chalk powder, detergent powder and slaked lime. Which of these mixtures ?

3

- (a) would show Tyndall effect ?
- (b) would leave residue on filter paper after filtration ?
- (c) would give transparent solution ?

8

(a) When common salt is dissolved in water, what will be the change in volume and why ?

3

(b) Write any one similarity between three states of matter.

9

"Solid carbon dioxide is called dry ice". Justify this statement.

3

10

Identify the three types of plastids. Write the important function of each.

3

11

Give two features of each of the following tissues :

3

- (a) Tissue that stores fat in our body.
- (b) Tissue that receives and transmits impulse in our body.
- (c) Tissue that controls contraction and relaxation of blood vessels.

(2)

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.

(2½)

13

Answer the following questions :

3

- (i) Give the name of the physical quantity that corresponds to the rate of change of displacement.
- (ii) A man moves on a circular path of radius  $r$  and comes to his original position. Find the distance travelled and the displacement of the man.
- (iii) A body is moving with a velocity of 10 m/s. If the motion is uniform, what will be the velocity after 10 s.

(1)

14

A physical quantity 'X' is identified as rate of change of velocity. Identify 'X'. Write its SI unit. Starting from a stationary position, Rahul pedals his bicycle to attain a velocity of 6 m/s in 30 s. Then he applies brakes such that the velocity of bicycle comes down to 4 m/s in the next 5 s. Calculate the acceleration of the bicycle in both the cases.

3

(2)

15

A constant force acts on an object of mass 5 kg for a duration of 2 s. It increases the object's velocity from 3 m/s to 7 m/s. Find the magnitude of the applied force. Now if the force were applied for a duration of 5 s, what would be the final velocity of the object ?

3

(3)



- 16 (i) Why is Newton's law of gravitation called a **universal law**? 3  
(ii) A body weighs 120 N on the earth. Find its **weight on the moon**.
- 17 Aakanksha's mother had grown vegetables like **bottle gourd**, capsicum bitter gourd and tomatoes inside the fencing of her home. **One morning** while she was busy in her work she asked Aakanksha to water the **plants** but Aakanksha didn't comply. She told her that as we need food for **development**, plants also require nutrients, which they get from air, water and soil. **Deficiency** of these nutrients affects growth and susceptibility to diseases. 3  
(i) Name the nutrients supplied by **air and water to the plant**.  
(ii) What are macro nutrients and **why are they called so**?  
(iii) "Nature provides all the essentials for the plant growth and each component plays an important role". Learning from **nature**, mention two values that **everyone in a family should imbibe**.
- 18 Define **Animal husbandry**. Why **live stock production** needs to be improved? 3
- 19 (a) Draw a labeled diagram to show the simple distillation process. 5  
(b) Observe the following situations and identify the techniques associated with each  
(i) Milk is churned to separate cream from it.  
(ii) A mixture of sand and water is separated.  
(iii) Air is liquified to separate liquid  $O_2$   
(iv) By using filter paper, **different colours present in a dye are separated**.  
(v) Mixture of **ammonium chloride** and sand is heated.
- 20 Differentiate between **boiling and evaporation**. What is the effect of **temperature, surface area and wind velocity on evaporation**? 5

- 21 (i) Who discovered cell? Which major invention led to the discovery of the microscopic world? 5
- (ii) Name a single cell which may constitute a whole organism. What are they called?
- (iii) Every multi-cellular organism has come from a single cell. Justify the statement.

22 State the law of conservation of momentum. Derive it mathematically. Two balls of masses 100 g and 200 g moving in the same direction with velocities  $2 \text{ ms}^{-1}$  and  $1 \text{ ms}^{-1}$  respectively collide with each other. If the velocity of the ball of mass 200 g after collision becomes  $1.165 \text{ ms}^{-1}$ , find the velocity of the other ball. 5

23 A bike moves with a constant velocity of 5 m/s for 10 s and then its velocity increases to 10 m/s in the next 5 s. Thereafter its velocity decreases at a uniform rate until it comes to rest after 10 s. Express this entire run of the bike on the velocity-time graph. From the graph : 5

- (a) Identify the time interval when the bike was accelerating.
- (b) Find the distance travelled in the last 10 s.

- 24 (a) Name two common sources from which fishes are captured. 5
- (b) Why are mussels and shell fishes cultivated ?
- (c) As marine fish stocks get depleted, how the demand for more fishes can be met ?
- (d) How are marine fishes caught ?
- (e) Name two marine fishes of high economic values, which are also farmed in sea water.

#### SECTION - B

25 The sample which will give positive result for the experiment of testing of metanil yellow is : 1





- (a) I (b) II  
 (c) III (d) IV

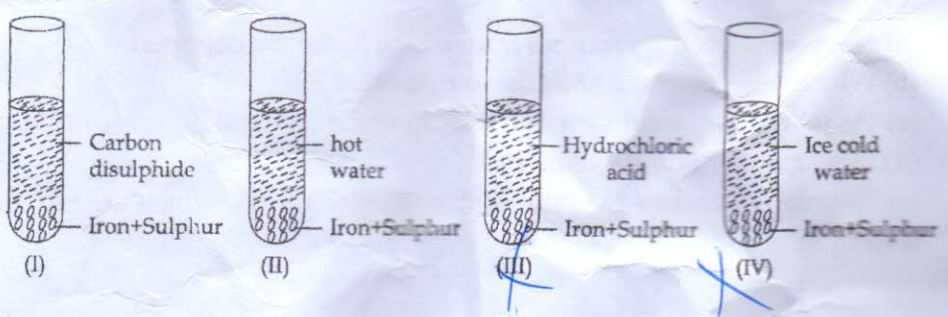
26 While using the chemicals in the laboratory the teacher instructed not to use single 1  
 dropper for different chemicals without washing because :

- (a) There are many droppers in the laboratory  
 (b) It is unhygienic  
 (c) It might contaminate the chemicals  
 (d) The dropper might get spoiled

27 Iron sulphide obtained by heating iron filings and sulphur powder is a : 1

- (a) black powder (b) hard black mass  
 (c) yellow solid (d) grey solid

28 In which solvent as given below sulphur of a mixture of iron filings and sulphur 1  
 powder dissolves ?



- (a) I (b) II (c) III (d) IV

29 For the study of the reaction between iron and copper sulphate, the copper sulphate 1  
 taken is in :

- (a) solid state (b) molten state  
(c) aqueous solution form (d) in non-aqueous solution

30 Two slides were focussed under two microscopes and students were asked to observe them carefully and identify them. The first slide had irregular cells with distinct nucleus and in the second slide cells were rectangular in shape arranged like a brick wall with cell wall and nucleus. The slides would be of : 1

- (a) slide 1 - onion peel cells, slide - 2 human cheek cells  
(b) slide 1 - human cheek cells, slide 2 - onion peel cells  
(c) slide 1 - transverse section of onion peel cells  
slide - 2 longitudinal section of onion peel cells  
(d) slide - 1 transverse section of human cheek cells  
Slide - 2 longitudinal section of human cheek cells

31 Dead cells, with lignified cell wall and without nucleus are the description of a simple permanent tissue which is : 1

- (a) parenchyma (b) collenchyma  
(c) sclerenchyma (d) both (a) and (b)

32 The colour of the pure ammonium chloride powder is : 1

- (a) white (b) blue (c) green (d) red

33 To establish relationship between the weight of a block and the force required to make it just move, a student first measured the force required for a block of weight  $W$  to move. He then repeated the experiment after placing a weight  $W/2$  and then  $2W$  on the block. Which of the following statements is likely to agree with the conclusion of the student ? 1

- (a) The force required by a block to just move does not depend on its weight.  
(b) The ratio of force required for making the block just move and its weight is equal to 1.  
(c) The ratio of force required for making the block just move and its weight is less than one.  
(d) The ratio of force required for making the block just move and its weight is more than one.

34 You are given aqueous solutions of sodium chloride and chalk powder. How would you distinguish between the two without tasting ? 2



35

What should be the temperature range of the mercury thermometer to be used for determining the melting point of ice? What is the correct position of the thermometer to get accurate reading? 2

36

How can we determine the percentage of water absorbed by the raisins? If we soak raisins in water for longer period would the percentage of water imbibed by them increase? Justify your answer. 2

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