

## SUMMATIVE ASSESSMENT - I, 2015-16

SCIENCE  
Class - IX  
Set -II

Time Allowed : 3 hours

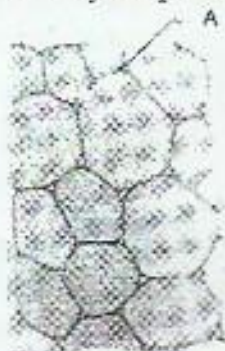
Maximum Marks : 90

## 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/ Identify the part marked 'A' in the diagram. 1



- 2/ What is the numerical ratio of average velocity to average speed of an object when it is moving along a straight path? 1
- 3/ Given an example to show that friction is an important factor in satisfying Newton's third law of motion. 1
- 4/ We feel cool after doing vigorous exercise. Why? 2
- 5/ What is the importance of osmosis in (a) unicellular organisms (b) plants 2
- 6/ State any two properties of gravitational force. 2
- 7/ (a) Sodium chloride contains two elements, but it is still a pure substance. Give reason. 3.

- (b) How would you confirm that a colourless liquid given to you is pure water?
- 8 Under what conditions gases can be liquefied? In which form LPG is filled in gas cylinder?
- 9 Why the following are called chemical changes?
- (i) Burning of wood (ii) Rusting of iron (iii) Digestion of food
- 10 (a) Name the different cell organelles which perform functions like protein/lipids synthesis, digestion of worn out cell organelles and energy generation. 3
- (b) Which endoplasmic reticulum plays a crucial role in detoxifying many poisons and drugs?
- (c) Write functions of Golgi apparatus.
- 11 Explain, with the help of a well labelled diagram, the structure and functions of phloem tissue. 3
- 12 In the following cases identify the direction of net force acting on them: 3
- (a) A car drives around a circular race track at a constant speed.
- (b) Earth moving around the sun.
- (c) A ball, rolling across a grassy field, slowly comes to a stop.
- 13 Write three points of difference in mass and weight of an object.
- 14 Name the two quantities, the slope of whose graphs gives
- (i) speed (ii) acceleration.
- A body starts to slide over a horizontal surface with an initial velocity of  $0.5 \text{ m/s}$ . Due to friction, its acceleration decreases at the rate of  $0.05 \text{ m/s}^2$ . How much time will it take for the body to stop?
- 15 What are the effects of the following on inertia of a body?
- (a) If force is doubled  (b) If density is halved 
- (c) If volume is reduced to one third 
- 16 A stone is dropped from the edge of the roof:
- (i) How long does it take to fall  $4.9 \text{ m}$  and what is its speed at the end of that fall?
- (ii) What is the acceleration (i) after  $1 \text{ s}$  (ii) after  $2 \text{ s}$ . after its release. (Take  $g = 9.8 \text{ ms}^{-2}$ )
- 17 Gopal who was studying in class IX, thought a lot about what can be done to make his village prosperous. He suggested village Panchayat to integrate farming with animal husbandry. He took sarpanch to government agencies for loan to buy modern agricultural implements, providing safe storage space and buy cattle. He also made them agree to establish a bio-gas plant in the village. 3
- (i) How does good animal husbandry practices benefit farmers?
- (ii) Write two advantages of having a bio-gas plant in the village.
- (iii) Which two qualities of Gopal inspired him to work for the prosperity of the village?
- 18 "There is a need for sustainable practices in agriculture and animal husbandry". Mention any three reasons for this need. 3
- 19 (a) If  $110 \text{ g}$  of salt is present in  $550 \text{ g}$  of solution, then calculate the concentration of the solution. 5
- (b) Explain the terms unsaturated solution, saturated solution and solubility
- 20 (a) Comment on the following statement: 5
- 'Evaporation causes cooling'.

- (b) Why do we observe water droplets outside the tumbler containing ice cold water? Explain reason.
- 21 Why the cell is called the structural and functional unit of life? Explain the concept of division of labour in multicellular organisms giving an example. 5
- 22 (a) Draw a position-time graph for an object in uniform motion. Show that the slope of the position-time graph gives the velocity of the object. 5  
 (b) Differentiate between distance and displacement. Length of the hour hand of a clock is R. Find the distance and displacement between 12 and 12.30.
- 23 (a) Define force. State four effects a force can produce in a body. 5  
 (b) A man pushes a box of mass 50 kg with a force of 80 N. What will be the acceleration of the box? What would be the acceleration if the mass were halved?
- 24 (a) Distinguish between macronutrient and micronutrients on the basis of 5  
 (i) their functions (ii) amount required by plants.  
 (b) Classify the following elements as macro or micronutrients in plants.  
 (i) Nitrogen (ii) Zinc  
 (iii) Copper (iv) Potassium  
 (c) In what way deficiency of these nutrients harmful to crops?

### SECTION - B

- 25 We need to use separate dropper for each chemical reagent because : 1  
 (a) there is separate dropper available for each chemical reagent  
 (b) using the same dropper may contaminate the chemicals reagent  
 (c) all the reagent bottles come with separate droppers  
 (d) it is not essential, one dropper can be used for different chemical reagents.
- 26 To observe starch granules in a potato under a microscope, freshly cut surface of potato was pressed on a slide. The stain which will show its presence clearly is : 1  
 (a) Methylene blue (b) Iodine solution (c) Safranin (d) Eosin
- 27 A mixture of iron filing and sulphur is strongly heated. The product obtained is powdered and shaken with Carbon disulphide. It is observed that : 1  
 (a) Iron and sulphur both dissolved in Carbon disulphide.  
 (b) Nothing dissolved in Carbon disulphide.  
 (c) Only iron dissolved in Carbon disulphide.  
 (d) Only sulphur dissolved in Carbon disulphide.
- 28 Take iron filings and sulphur powder in a china dish in any ratio and mix them properly. What will be formed out of the following : 1  
 (a) A compound (b) A mixture (c) A solution (d) An element
- 29 Dil  $H_2SO_4$  is added to zinc granules taken in a test tube. When a burning match stick is brought near the mouth of the test tube : 1  
 (a) white dense fumes are formed (b) the gas smells with pungent odour

- (c) a 'pop' sound is heard (d) reddish fumes are formed

30 On observing the prepared slides of onion peel cells and human cheek cells the students found that irrespective of their size, shape and activities a cell has: 1

- (a) Four functional regions (b) Three functional regions  
(c) Two functional regions (d) One functional region.

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 To separate the mixture of sand, ammonium chloride and common salt the teacher advised to separate the sublime substance from the mixture first before dissolving in water. The reason for this could be: 1

- (a) to save time as after adding water we need to evaporate it.  
(b) common salt and ammonium chloride both are soluble in water.  
(c) sublimation is easier than dissolving salt in water  
(d) no specific reason it can be done in any order

33 A student performed the experiment "To establish relationship between weight of a rectangular wooden block lying on a horizontal surface and minimum force required to just move it using a spring balance". If the weight of the given wooden block is nearly 200g wt and three known weights of 100g wt each are to be successively placed on the wooden block to take three more readings, then which one of the following spring balances, available in the laboratory would you select for the best results in the experiment? It is known that a force of 90g wt is required to just move the block on this surface. 1

- (a) Range 0-100g wt; Least count 1.0g wt  
(b) Range 0-200g wt; Least count 2.0g wt  
(c) Range 0-250g wt; Least count 2.0g wt  
(d) Range 0-500g wt; Least count 5.0g wt

34 You are given two aqueous solutions - a starch solution and a sugar solution. Which one will show Tyndal effect? Why? 2

35 While doing an experiment to determine the boiling point of water, a student heated water in a beaker and observed that when water starts boiling, the temperature remains constant. State reason. Where does the heat energy go? 2

36 A teacher soaked 10g raisins in 35mL of distilled water in a beaker A and similar amount in beaker B. She maintained the temperature of beaker A at 20°C and beaker B at 40°C. After an hour compared the percentage of water absorbed by the raisins in beakers A and B. What inference is drawn from her results? 2

According to the law of conservation of momentum, when 2 bodies collide with each other their total momentum before collision is equal to their