VI58YXW

SUMMATIVE ASSESSMENT – I, 2016-17

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.**

Chem – Q4,7,8,9,19,20,27,28,29,32,34,35

Biology – 1,5,10,11,17,18,21,24,25,26,30,31,36

Physics – 2,3,6,12,13,14,15,16,22,23,33

SECTION-A

1 State the role of vacuole in a plant cell. 1

2 Mention the nature of motion of a body if its displacement-time graph is a straight line parallel to time axis. 1

3 A body of mass 25 kg has a momentum of 125 kg m/s. What is the velocity of the body ? 1

4 State the principle involved in the following techniques of separation of mixtures : 2

(a) Chromatography

(b) Fractional distillation

Draw a diagram to show the location of different types of meristematic tissues in the plant body. Which one of them is called cambium ? 2

A stone and the earth attract each other with an equal and opposite force. Why then we see only the stone falling towards the earth but not the earth rising towards the stone ? 2

Classify the following into elements, compounds and mixtures. Chlorine, blood, water, air, milk, oxygen. 3

Describe an activity to show that air contains water vapours. 3

How does pressure help in liquification of gases ? Name two liquefied gases used in daily life. 3

0 Can a single cell live independently on its own? Explain by giving example. 3

11 Correlate the first pair of words given below and accordingly insert a suitable word in the second pair.

(a) Heart : Cardiac muscles : _____ : Smooth muscles

(b) Tissue repair : Areolar : :Insulation : _____

(c) Squamous epithelium : Protection : : _____ : Absorption and secretion.

12 A man weighing 60 kg runs along the rails with a velocity of 18 km/h and jumps on to a trolley of mass 1 quintal standing on the rails. Calculate the velocity with which trolley will start travelling along the rails (one quintal = 100 kg) 3

13 (i) Is the acceleration due to gravity of earth 'g' always a constant at every place? Discuss. 3

(ii) During a free fall will heavier objects accelerate more than lighter ones ? Give reason for your answer.

14 A particle moves over three quarters of a circle of radius r cm. Calculate the magnitude of its distance and displacement. 3

15 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 m/s²) ?

16 A powerful motorcycle can accelerate from rest to 28 m/s in only 4 s. 3

(a) What is its average acceleration ?

(b) How far does it travel in that time ?

17 Rameshwar took the responsibility of his fields when his father got old. His father advised him to use farmyard manure over fertilizers but he wanted to use chemical fertilizers. His father told him about the adverse effects of chemical fertilizers to the nearby water bodies. Rameshwar's father encouraged him and his friends also to use organic manure and careful and judicious use of chemical fertilizers. 5

(i) Why the chemical fertilizers must be used carefully and judiciously ?

(ii) Manures are natural fertilizers. How can they be prepared in the field ?

(iii) Why did Rameshwar's father advise him ?

18 Mention two problems of culture fishing. How can it be overcome ? 3

19 (a) Pond water contains sand grains, clay particles, salt, pieces of paper and some air bubbles. Select from amongst these, an example each of a solvent, solute, colloid and suspension. 5

(b) Give one example of each of the following –

(i) A solution of gas in liquid.

(ii) A solution of two solids.

(iii) A solution of two gases.

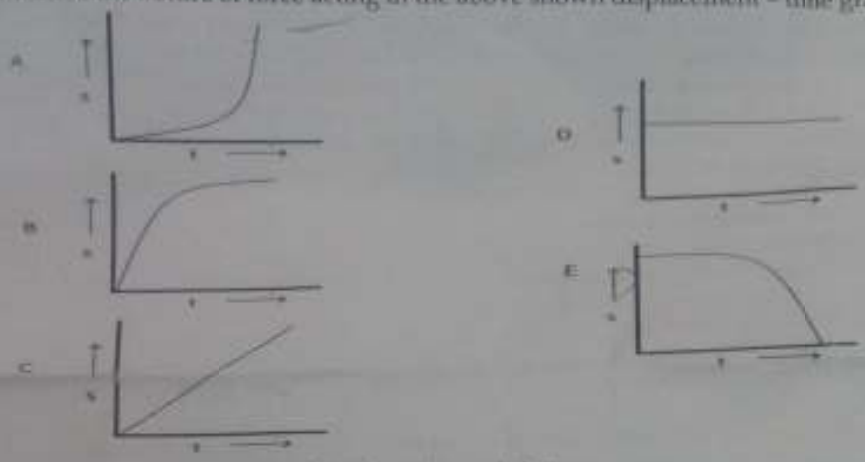
20 (a) Define Melting point. Describe an activity with labelled diagram to find melting point of ice. 5

(b) Explain why temperature remains same during melting of ice.

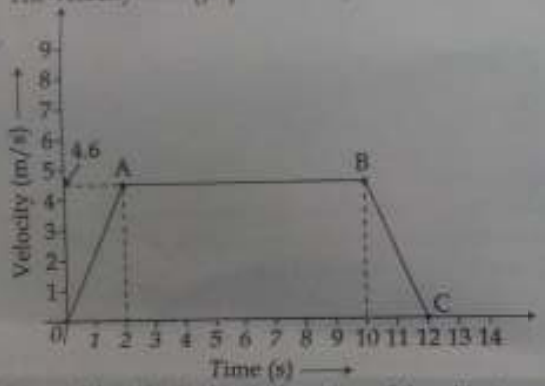
21 (a) Define osmosis. Write its types. What happens when a cell is placed in hypotonic and hypertonic solutions respectively ? 5

(b) Mention two points of difference between osmosis and diffusion.

22 Describe the nature of force acting in the above shown displacement – time graphs : 5



23 The velocity-time graph of an object is as shown below. 5



(a) Identify the kind of motion of the object represented by lines OA and BC.
(b) With what velocity the object is moving at t = 8 seconds ?
(c) Calculate the acceleration of the object in the following cases :
(i) Between the third and tenth second.
(ii) During the last two seconds.

24 Mention the preventive and control measures used before grains are stored. List two biotic and abiotic factors each that are responsible for grain loss. 5

SECTION - B

25 A sample solution on adding conc. hydrochloric acid turned magenta. The sample has : 1
(a) metanil yellow (b) starch
(c) iodine solution (d) all of the above

26 Aayush added a few drops of iodine solution to the food samples A, B, C and D containing boiled rice extract arhar dal extract, boiled potato extract and corn extract respectively. Which of the above samples will show positive result for the presence of starch? 1
(a) A, B and C (b) B, C and D
(c) A, C and D (d) A, B, C and D

27 While conducting the experiment in laboratory the teacher instructed the students to be careful with carbon disulphide and not to bring it near the burner because : 1
(a) carbon disulphide is volatile and its vapours are highly inflammable
(b) for dissolving sulphur in carbon disulphide we need not heat it.
(c) carbon disulphide does not show accurate results/reactions on heating.

(d) None of the above.

28 When iron filings and sulphur powder are mixed the components of the mixture retain their properties and can be separated by physical methods. This indicates that : 1

(a) It is a chemical change (b) It is a irreversible change
(c) It is a physical change (d) It is a permanent change

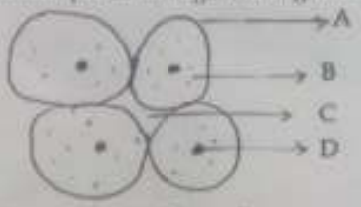
29 Magnesium is a silvery white metal. It burns in the presence of oxygen with a 1

(a) Brilliant white flame
(b) Bright orange flame
(c) Fluorescent green flame
(d) Bluish flame

30 While preparing a temporary mount of onion peel, cells are stained to : 1

(a) Highlight the cell organelles
(b) Make the cells turgid
(c) Moisten the cell
(d) Help in cell division

31 Intercellular space in the given diagram of parenchyma tissue is marked by the arrow :- 1



(a) A (b) B (c) C (d) D

32 Ammonium chloride sublimates on heating. It means that on heating ammonium chloride : 1

(a) first melts at its melting point and then changes into a gas at its boiling point.
(b) directly changes from solid to vapours without melting.
(c) loses its water of crystallization.
(d) condenses from the gaseous state to the liquid state

33 Four students A, B, C and D were asked to pick up spring balance of appropriate range and least count to measure the minimum force required to just move a wooden block weighing 400 gwt on a surface. They were told that this force will be in the range of 170 - 190 gwt. The range and least count of the spring balance selected by them were respectively as : 1

(A) (0 - 200 gwt, 1 gwt) (B) (0 - 200 gwt, 0.5 gwt)
(C) (0 - 500 gwt, 1 gwt) (D) (0 - 200 gwt, 2 gwt)

Which student is likely to get best result ?

(a) (A) (b) (B) (c) (C) (d) (D)

34 Dipti was asked to prepare four separate mixtures in four beakers A, B, C and D by mixing sugar, fine sand, thin paste of starch and chalk powder respectively in water and then categorise each as stable or unstable. What will be correct categorization? 2

35 While determining the melting point of ice it was observed that even when ice cubes were being moderately heated using the gas burner, the temperature did not rise for sometime till the whole ice melted give the possible reason. 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. Why do raisins get swelled up ? 2

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