INDIAN SCHOOL DARSAIT

SAMPLE QUESTION PAPER-1

SCIENCE (086)

Class: IX   Max. Marks: 80

Date: 22-01-2018   Time: 3 hrs

General Instructions:

(i)   The question paper comprises two sections, A and B. You are to attempt both the sections.

(ii)   All questions are compulsory.

(iii)   All questions of **Section-A and B** are to be attempted separately.

(iv)   There is an internal choice in **three questions** of three marks each, **two questions** of five marks each and one question of two marks each.

(v)   Question numbers 1 and 2 in **Section-A** are **one mark** question. They are to be answered in one word or in one sentence.

(vi)   Question numbers 3 to 5 in **Section- A** are **two marks questions**. These are to be answered in 30 words each.

(vii)   Question numbers 6 to 15 in **Section-A** are **three marks questions**. These are to be answered in about 50 words each.

(viii) Question numbers 16 to 21 in **Section-A** are **5 marks questions**. These are to be answered in 70 words each.

(ix)   Question numbers 22 to 27 in **Section- B** are based on practical skills. Each question is a **two marks** question. These are to be answered in brief.

Section A

1   Define hybridisation.   1

2   Write any two characteristics of particles of matter.   1

3   What do you mean by: (a) Solubility   (b) Saturated solution   2

4   A bullet of mass 10 g moving with a velocity of 400m/s gets embedded in a freely   2
      suspended wooden block of mass 900 g. What is the velocity acquired by the block?

5   An electric pump is used to pump water from an underground sump to the   2
      Overhead tank situated 20 m above. It transfers 2000 kg of water to overhead
      tank in 15 minutes. Calculate the power of pump.

6 (a) Differentiate between evaporation and vaporization. (Two points)   3

(b) What do you mean by latent heat of fusion?

7 (a) Explain any two causes of water pollution.   3

(b) Write any two methods to prevent soil erosion.

8 Consider the position vs. time graph below for cyclists A and B and answer the following questions.   3
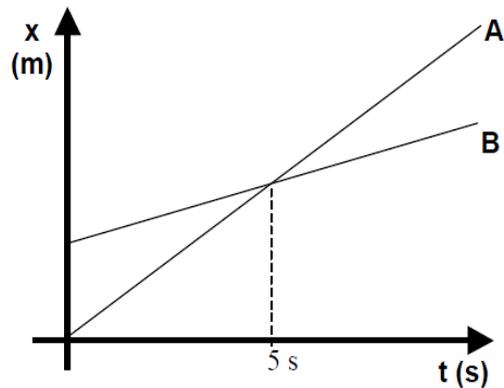
(i) Do the cyclists starts at the same point?

(ii) At t=7S which cyclist is ahead?

(iii) Which cyclist is travelling faster at time t= 3s

(iv) Are their velocities equal at any time? If so, when?

(v) What is happening at the intersection of the two lines A and B?

9 State Archimedes principle. Give some applications of Archimedes' principle.   3

10 (a) Define kinetic energy. Give examples.   3

(b) Obtain an expression for the kinetic energy of an object of mass 'm' and possessing a velocity 'v'

OR

State and prove law of conservation of energy.

11 (a) What is the principle behind the following separation techniques?   3

(i) Distillation   (ii) Centrifugation

(b) Identify the dispersed phase and dispersion medium of emulsion and gel.

OR

(a) A solution contains 50gm of common salt in 350gm water. Calculate the concentration in terms of mass by mass percentage of the solution.

(b) Write any two applications of chromatography.

12 Explain why :   3
    (a) Lysosomes are known as suicidal bags.
    (b) Mitochondria are known as power house of the cell.
    (c) Plasma membrane is known as selectively permeable membrane.

13 (a) List any four characteristics of parenchyma tissue.   3
    (b) State two important functions of Xylem.

                                          OR

    Give one reason for the following statements :
    (a) The blood is called connective tissue.
    (b) Muscles are able to contract and relax to bring about movements.
    (c) Muscles of heart are called involuntary muscles.

14 A farmer irrigated his field excessively just after applying fertilizers. Mr.Verma,   3
    an agriculturist explains that this is not a correct practice.
        a) Why are manures and fertilizers used in fields?
        b) Why did Mr. Verma say that the farmer's practice was incorrect?
        c) What is the value exhibited by Mr. Verma?

15 Draw a labelled diagram of nitrogen cycle.   3

16 (a) Write any two postulates of Dalton's atomic theory.   5

    (b) The mass of one atom an element A is 5.3×10^{-23} gm. What is its atomic mass?

        Also give the symbol this element.

    (c) Write the chemical formula of Aluminium sulphate and Sodium oxide.

17 (a) Write any two observations made by Rutherford in alpha ray scattering   5

        experiment.

    (b) There are two elements $_{13}A^{26}$ and $_{14}B^{26}$. What is the relation between the atoms of

        these elements? Also draw Bohr atom model for these atoms.

    (c) What are anode rays or canal rays?

18 (i) What is echocardiography?   5

    (ii) How is ultrasound used for detecting cracks and flaws in metal blocks?

                                          OR

    (a) State Newton's second law of motion.

    (b) Derive the mathematical expression for force, F = ma.

    (c) During athletics meet a high jumping athlete is provided either a cushion or a
        heap of sand on the ground to fall upon. Why?

19 (i) State and prove the law of conservation of momentum.   5

    (ii) Discuss the coservation of mommentum in each of the following cases.

(a) A rocket taking of from the ground.

(b) when a bullet is fired from a gun.

20 a) Write the characteristic features of :   5

   (i) Arthropoda (ii) Porifera   (iii) Amphibia

   b) Name the following:

   A, B, C, D, E and F are living organism. Identify the group to which they belong to

   on the basis of the following features.

   (i) A is unicellular, microscopic eukaryotic and moves with pseudopodia

   (ii) B is unicellular, microscopic prokaryotic with cell wall

   (iii) C is multicellular, filamentous, eukaryotic, autotrophic and aquatic

   (iv) D is eukaryotic, saprophytic, with cell wall

21 a) Why a person suffering once from small pox cannot suffer from it again?   5
    b) Name one disease associated with the attack of microbe on the lungs.
    c) Write 2 differences between acute and chronic diseases. Give one example of
        each.
    d) How can we prevent exposure to infectious microbes?
                                          OR
    a) What are communicable diseases?
    b) What are the common methods of transmission of diseases.
    c) How does antibiotic prevent the cause of diseases caused by bacteria? Explain
        with the help of an example.

Section B

22 In an experiment to determine the density of a given solid a student made the   2
    following observations. Mass of the solid = 120g

    Initial reading of water level on thwe measuring cylinder = 45 ml

    Reading of water level in measuring cylinder when the solid is completely immersed
    in it = 69 ml. Calculate the density of the solid based on these observation .

23 Represent graphically two sound waves having same amplitude but different   2
    frequencies.

24 (a) How does boiling point of water changes with decrease in atmospheric pressure?   2

    (b) Name the gas evolved when Magnesium reacts with hydrochloric acid.

25 Write two observations when solid copper sulphate is heated in a dry test tube.   2

26 Write any two precautions that should be taken while preparing a temporaty mount   2
    of the onion peel cells.

27 Draw diagram of a Neuron. Label any four parts.   2