General Instructions:

INDIAN SCHOOL MUSCAT
MID-TERM EXAMINATION

SCIENCE

CLASS: IX   Sub. Code: 086   Time Allotted: 3 Hrs.

11.09.2017   Max .Marks: 80

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 **2** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**
5. Question numbers **3** to **5** in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **6** to **15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
7. Question numbers **16** to **21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **22** to **27** in **Section-B** are questions based on practical skills. Each question is of two **marks.**

SECTION A

1. State action and reaction when a bullet is fired from a gun.   1

2. Identify the solute and solvent in 'tincture of iodine'.   1

        a) Convert 310 K to degree Celsius scale.   2

        b) For any substance, why does the temperature remain constant during the change of state?

4. What is organic farming? Name two substances used as biopesticides for storing grain.   2

5.   a) What are the constituents of xylem tissue?   2

        b) Which tissue makes up the husk of coconut?

6. A car travels 100 km at a speed of 50 km/h and returns with a speed of 20 km/h. Calculate the   3
    average speed for the entire journey.

7. Give reason: 3

        a. An athlete after a long jump falls onto a cushion bed.

        b. It is difficult for a fireman to hold a hose pipe that is ejecting water at high velocity.

        c. A passenger standing in a bus falls forward when the bus suddenly comes to a stop.

8.   i. Under what condition is distance and magnitude of displacement said to be equal.   3

       ii. Uniform circular motion is accelerated motion. Give reason.

       iii. State the law of conservation of momentum.

9.   3
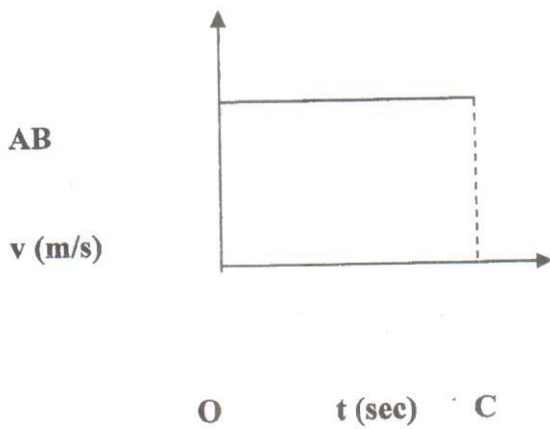
       i.   What type of motion is represented by the velocity time – graph shown above.

       ii.   Name the physical quantity that can be calculated by the area of the rectangle

               OABC.

       iii.   What is the acceleration of the object?

10.   a) Classify the following changes as physical and chemical change: 3

          (i)   freezing of water

          (ii)   burning of paper

       b) Define crystallization. Why is crystallization a better technique than simple evaporation?

                                         OR

          a) How are mixtures different from compounds? [two points each]

          b) Give any two applications of chromatography.

11.   What do you understand by the term 'concentration'? A solution contains 25g of sugar dissolved   3

       in 500g of water. Calculate the concentration of the solution in terms of mass by mass percentage.

12.   a) Differentiate between boiling and evaporation. [2 points each]   3

          b) How does the rate of evaporation change with increase in

              (i) temperature   (ii) humidity

13.   What is composite fish culture system? State the advantages and draw backs of this system ?   3

14.   What will happen if we put an animal cell in a   3

          a) Hypertonic solution

          b) Hypotonic solution

          c) Isotonic solution

15. Name the plant tissue which helps in the conduction of water and minerals from the roots to upper   3
    part of the plant tissue. Name their components of this complex tissue.

16. i. Using a velocity – time graph, derive the equation $S = ut + \frac{1}{2} at^2$ 5

    ii. A bus starting from rest moves with a uniform acceleration of 0.1 m/s^2 for 20 seconds,
    Calculate (a) Final velocity of the bus   (b) distance travelled in this time.

    OR

    i. Differentiate between balanced and unbalanced forces. (2 points)

    ii. Name the S I unit of force

    iii. A bullet of mass 20 g is horizontally fired with a velocity of 150 m/s from a pistol of mass 2
    kg. What is the recoil velocity of the pistol?

17. i. Define momentum and give its S I unit   5

    ii. Two similar vehicles are moving with the same velocity but one of them is loaded and the other
    is empty. Which will require a greater force to stop. Give reason.

    iii. An object of mass 1200 kg is moving with an acceleration of 4 m/s^2, Calculate the force acting
    on the object.

18.   a) Define latent heat of fusion.   5

        b) Which produces more severe burns: steam at 100°C or water at 100°C? Why?

        c) Give reason

            (i)   Gases exert pressure

            (ii)   We get the smell of perfume sitting several meters away.

19.   a) A student passed a beam of light through a mixture of milk and water. What will the   5
            student observe? Name the phenomena observed.

        b) How will you separate a mixture of oil and water? Explain with a neat labelled diagram.

20.   a) Name any two type of plastids? Mention their function   5

        b) Explain the structure of mitochodria.

        c) Suggest one similarity between mitochondria
            and chloroplast.

21.   a) Draw a labeled diagram showing the location of meristematic tissues in plant body.   5

        b) In the labeled diagram specifically mention the function of any two parts.

SECTION B

22.   While determining the density of a solid sphere a student noted the following readings: 2

            a. Mass of the sphere = 64 g

            b. Level of water in the cylinder without the sphere = 62 ml

c. Level of water in cylinder with sphere immersed = 70 ml

On the basis of the above observation calculate the density of the object.

23. The spring balance used for pulling a block of wood has a least count of 0.5 Kg wt. The block starts moving when the pointer is on the 25th division of the spring balance. Calculate the force applied on the block. 2

24. Give two precautions that needs to be taken determining the melting point of ice. 2

25. How will you classify true solution and suspension on the basis of transparency and stability. 2

26. Which one of the following is the correct step, in the procedure of making a temporary slide of human cheek cells 2

   a) Place the cheek cells scrapings in a watch glass containing water

   b) Place the cheek cell scraping in the centre of a clean glass slide

   c) Dip the toothpick, containing cheek cell scraping in the stain and the transfer to a clean glass slide.

   d) Obtain the cheek cells scraping directly on the glass slide and stain with iodine

27. Following statements describe the steps to detect the presence of metanil yellow in the dal. One of the four statement given below is incorrect. The incorrect statement is 2

   a) Take 2ml of food extract

   b) Grind 3-5g of dal and prepare a solution

   c) Filter the food content extract and collect the filtrate

   d) Add 2-3 drops of concentrated sulphuric acid

End of the Question Paper