Roll Number			SET B

INDIAN SCHOOL MUSCAT
MID TERM EXAMINATION
SCIENCE

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

01.10.2018   Max. Marks: 80

1.   An athlete always runs some distance before taking a jump. Why?   1

2.   Camphor disappears without leaving any residue. Explain.   1

3.   Difference between balanced and unbalanced forces.   2

4.   a) How does the force of gravitation between two objects change when both the masses are   2
      doubled and the distance between them is reduced to half?

      b) Write the SI unit of 'G '?

5.   a) Explain why particles of a colloidal solution do not settle down when left undisturbed.   2

      b) What is the effect of change of temperature on the solubility of salt?

6.   Define the following: 2
      a) Latent heat of vaporisation
      b) Melting point

7.   How will you separate a mixture of water and kerosene oil? Explain.   2

8.   a) What is the difference between plasma membrane and cell wall?   2

          b) Name the process which amoeba obtains its food.

9.   a) Identify the type of tissue present in the following   2
              (i) Bark of tree
              (ii) Husk of coconut
          b) Usually shrubs and herbs grow in open places and are exposed to forceful winds. But
              they do not break. Why?

10.   How is chromatin network related to chromosomes?   2

11.   a) What is the utility of tissues in multicellular organisms?   2
      b) Give two features of cardiac muscles.

12.   a) Define uniform circular motion. Is it an accelerated motion? Why?   3
      b) If yes, what is the direction of acceleration? Give an example of this type of motion?

(OR)

a) Define uniform and non – uniform acceleration.

b) Sketch the distance – time graph for uniform motion of an object.

13.   The velocity – time graph of a body is shown below :   3
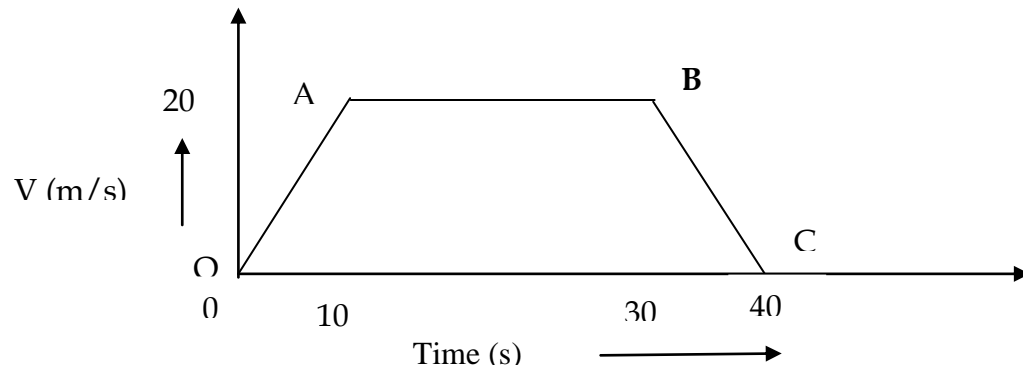
a) State the kind of motion represented by OA and AB.
b) Find the velocity of the body after 10 s and after 40 s.
c) Find the distance travelled between 10th and 30th second.

14.   Explain the following phenomena :   3
a) Mangoes fall from a tree when its branches are shaken vigorously.
b) A cricket player lowers his hands slightly while catching a ball.
c) It is difficult for the fireman to hold a hose, which ejects a large amount of water at high velocity.

15.   a) State the Universal Law of Gravitation.   3
b) Who gave the Universal Law of Gravitation?
c) State one significance of Universal law of Gravitation.

16.   a) Differentiate between true solution and suspension based on the following properties.   3

(i) Transparency   (ii) Filtration   (iii) stability

(OR)

a) What is a saturated solution? What happens when saturated solution is allowed to cool?

b) What is solute and solvent in the air?

17.   a) Define matter. Arrange the three states of matter in the increasing order of :   3

(i) Rate of diffusion   (ii) Force of attraction

b) What will be the state of water at:

        (i) 100^{0} C   (ii)   300 K

18.   a) What are the two ways in which physical state of matter can be changed?   3
b) Draw the "state of matter triangle" to show the inter-conversion of states of matter.

19. A paralytic patient was unable to walk. 'The family member of the patient took the outmost care 3
    of the patient.
    a) Name two tissues responsible for the movement of a body.
    b) Name the tissues present in brain and spine.
    c) What value of the family members is seen in the above case?

    (OR)

    a) Give one word answer to the following
            (i) Organelle containing chlorophyll
            (ii) Organelle with ribosome attached to its surface
    b) Cell membrane is known as "selectively permeable membrane". Give reason

20. a) Define the term diffusion. 3

    b) What would happen to the life of a cell if there was no golgi apparatus?

21. What will happen if 3

       a) a cell contains higher water concentration than the surrounding medium.

       b) a cell having lower water concentration than the surrounding medium.

       c) a cell having same water concentration on both the sides.

22. a) Draw velocity- time graph for a body that has initial velocity 'u' and is moving with 5
       uniform acceleration 'a'. Use it to derive $S = ut + \frac{1}{2}at^2$.

    b) The brakes applied to a car produce an acceleration of 6 m/s^2 in the opposite direction to
       the motion. If the car takes 2 s to stop after the application of brakes, calculate the
       distance it travels during this time.

    (OR)

    a) Draw velocity- time graph for a body that has initial velocity 'u' and is moving with uniform
    acceleration 'a' . Use it to derive $v^2 - u^2 = 2aS$.

    b) An object moves with an initial velocity of 10 m/s and uniform acceleration of 0.5 m/s^2 .
    Calculate the velocity after 10 s and the distance travelled in this time.

23. a) State and prove law of conservation of linear momentum. 5
    b) Explain why a gun recoils after firing with much less velocity than bullet.

24. a) CO_2 is a gas. Write its two gaseous properties to justify it. 5

    b) Mention any two differences between evaporation and boiling.

    c) How can we liquefy a gas?

    (OR)

     a) How can you show that evaporation causes cooling?
     b) When an incense stick (agarbatti) is lighted in one corner of a room, its fragrance spreads in
    the whole room quickly .Which characteristic of the particles of matter is illustrated by this
    observation?
    c) Clothes get dry faster in summer than rainy season. Give reason.

25. a) 2.5 g of sugar is dissolved in 47.5g of water. Calculate its concentrations percent by mass. 5

b) Mention any two differences between homogeneous and heterogeneous mixtures.

c) Which separation technique will you apply for separating butter from curd. Also mention the principle involved in the process.

26.   a) A group of students completed the project of finding the botanical names of all the trees   5
            present in the school campus. They prepared metal plates with names carved on it, to fix
            it on the plant trunks. Shreya was concerned that if the metal plate is fixed into tree many
            cells of the tree may get damaged. But the group members explained her that the outer
            layer of trunk does not have living cells and there won't be any damage to the tree.

            (i) What type of cells are present on the outer layer of the bark/tree trunk?
            (ii) How does the cork act as a protective tissue?
            (iii) What value of the group is seen in the above cast?
        b) Why does epidermal tissue have no intercellular space?
        c) State any two functions of stomata.

OR

a) Name the tissues for the following:
    (i) Stores fat in animal body.
    (ii) Tissue that joins bone to bone.
    (iii) Covers the external surface of animal body.
    (iv) Tissue that joins bone to muscle
b) What is the function and location of stratified squamous epithelium?
c) Draw a well labelled diagram of a typical neuron.

27.   a) Enumerate three differences between a prokaryotic and Eukaryotic cell.   5

        b) Draw a well labeled diagram of a prokaryotic cell.

End of the Question Paper