Roll Number		

SET B

INDIAN SCHOOL MUSCAT
FINAL TERM EXAMINATION
SCIENCE

CLASS: X | Sub. Code: 086 | Time Allotted: 3 Hrs

25.11.2018 | Max. Marks: 80

General Instructions:
(i) The question paper comprises of five sections – A, B, C, D and E. You are to attempt all the sections.
(ii) All questions are compulsory.
(iii) Internal choice is given in sections B, C, D and E.
(iv) Question numbers 1 and 2 in Section-A are one mark questions. They are to be answered in one word or in one sentence.
(v) Question numbers 3 to 5 in Section- B are two marks questions. These are to be answered in about 30 words each.
(vi) Question numbers 6 to 15 in Section-C are three marks questions. These are to be answered in about 50 words each.
(vii) Question numbers 16 to 21 in Section-D are 5 marks questions. These are to be answered in about 70 words each.
(viii) Question numbers 22 to 27 in Section- E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION A

1. Which chamber of the human heart receives oxygenated blood? Name the blood vessel which supplies blood to this chamber. 1

2. Name the tissue which transport 1
   a) Soluble product of photosynthesis in plant
   b) Water and minerals in plant

SECTION B

3. A dry pallet of common base 'X' when kept in open air absorbs moisture and turns sticky. The compound is also a by-product of chlor - alkali process. Identify 'X'. What type of reaction occurs when 'X' is treated with strong acid? Write a balanced chemical equation for such reaction. 2

4. Write any two advantages and two limitations of solar energy. 2

   OR

   Differentiate between conventional and non- conventional sources of energy. Give one example for each.

5. a) How does Mendel's monohybrid cross show that a trait is recessive? 2
   b) What would be the genotypic ratio in F_2 generation of monohybrid cross?

SECTION C

6. Explain how tidal energy is harnessed and write one limitation and one advantage of the use of tidal energy. 3

7. Series arrangements are not used for domestic circuits. List any three reasons. 3

8. An object of height 6 cm is placed perpendicular to the principal axis of a concave lens of focal length 5 cm. Determine the position, size and nature of the image if the distance of the object from the lens is 10 cm. 3

OR

A concave mirror has a radius of curvature of 24 cm. If the object is placed 20 cm in front of the mirror then determine the properties of the image.

9. Draw a labeled ray diagram showing refraction of light through glass slab. Mark angle of incidence, angle of refraction and angle of emergence in the diagram. 3
Define lateral displacement.

10. What were the two major shortcomings of Mendeleev's periodic table? How have these been removed in the modern periodic table? 3

11. A trivalent metal X is used along with iron III oxide to join broken iron rails which is a highly exothermic reaction. 3
a) Identify the metal X and Name the reaction.
b) Write the balanced chemical equation for the reaction?
c) i) Name a metal which does not react with cold water but reacts with hot water.
ii) Name a metal which neither reacts with cold nor with hot water but reacts with steam.

OR

Explain how the following metals are obtained from their compounds by reduction process:
a) Metal X which is low in reactivity series.
b) Metal Y which is in the middle of series.
c) Metal Z which is high in reactivity series.

12. a) "Sodium hydrogen carbonate is a basic salt." Justify the statement. 3
b) A student dropped a few pieces of marble in dilute HCl contained in a test tube. The evolved gas was passed through lime water.
i) What change would be observed in lime water?
ii) Write balanced chemical equation for the above change.

13. Our government launches campaigns to provide information about AIDS prevention, testing, and treatment by putting posters, conducting radio shows and using other agencies of advertisement. 3
a) To which category of disease AIDS belong? Name its causative organism.
b) What is the significance such a program government trying to develop in the citizen by conducting the above kind of campaign.

14. What is geotropism? Draw a labelled diagram of a potted plant showing positive geotropism and negative geotropism. 3

OR

What are acquired traits? Why are these traits genetically inherited over generation? Explain.

15. Which chamber of the human heart receives oxygenated blood? Explain how oxygenated blood from this chamber is sent to all parts of the body. 3

SECTION D

16. a) What is dispersion of white light? State its cause. 5
b) Explain with the help of a labeled ray diagram the formation of rainbow in the sky.

OR

a) What is a spectrum?
b) How can we recombine the components of white light after a glass prism has separated them? Illustrate it by drawing a ray diagram.

17. a) State Joules law of heating. (1) 5
b) Why Nichrome is used to make the heating elements of devices? (2)
c) Find the heat produced when a current of 0.5A is passed through a coil of resistance 200 ohm for 5 minutes. (2)

18. a) Give two differences between Roasting and calcination. 5
b) What is meant by refining of metals and concentration of the ore?
c) In the electrolytic refining of metal M, name the cathode, anode and the electrolyte.

19. In the following table, eight elements A, B, C, D, E, F, G and H of modern periodic table with the atomic numbers in parenthesis are given. 5

Period	Group 1	Group 2
2	A (3)	E (4)
3	B (11)	F (12)
4	C (19)	G (20)
5	D (37)	H (38)

On the basis of above table, answer the following questions:
a) Write the electronic configuration of F?
b) Mention the number of valence electrons and the number of shells in the atom of F.
c) Write the size of the atoms of E, F, G and H in decreasing order.
d) What happens to the reactivity of elements A, B, C and D as we move down the group1.
e) Write the formula of the compound formed by the reaction of A with oxygen.

20. a) List in tabular form the differences between aerobic respiration and anaerobic respiration. (any two points) 5
b) Why do we feel cramps in our muscles during sudden physical activity?
c) How is oxygen transported in our body which is taken from outside?

21. a) What is pollination? Give the two types of pollination 5
b) Draw longitudinal section of a typical flower showing pollen germination on stigma and label the following
i) Stigma
ii) Pollen tube with a male germ cell
iii) Female germ cell

OR

a) List two advantages of vegetative propagation mostly used in growing grapes and banana plants.
b) Explain what happens when
   i) A planarian gets cut into many pieces accidently.
   ii) Brayophyllum leaf falls on a wet soil.
   iii) On maturation sporangium of a Rhizopus burst.

SECTION E

22. A student focuses the image of a candle flame, placed at about 2 m from a convex lens of focal length 10 cm on a screen. After that he moves gradually the flame towards the lens and each time focuses the image on the screen. In which direction does he move the lens to focus the flame on the screen? What happens to the size of the image of the flame formed on the screen? 2

23. A voltmeter has a least count of 0.05 volt. While doing Ohm's law experiment, a student observed that the pointer of the voltmeter coincides with 15th division. What is the observed reading? 2

24. On mixing solutions of Barium chloride and sodium sulfate, a white precipitate is obtained. Identify the type of reaction and name the precipitate formed. 2

OR

Give two precautions to be taken while carrying out a reaction between Quick lime and water.

25. What color change to pH paper you would observe when it is dipped in (a) highly acidic and highly alkaline solutions (b) weakly acidic and weakly alkaline solutions? 2

26. Draw diagrams showing reproduction in yeast in proper sequence 2

27. When a student observes a temporary mount of a petunia leaf peel under the microscope, he observes two types of cells. 2
   a) Name these two types of cells
   b) Give one point of difference between two cells which helped him to identify the cells.

OR

What happens to carbon dioxide given out by the germinating seeds from the experiment you have studied on respiration?

End of the Question Paper