Roll Number		

SET A

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. Wing of a bird and wing of a bat are examples of analogous organ. Justify the answer giving a suitable reason. 1

2. All information for our environment is detected by specialized tips of some nerve cells. Mention the name given to such tips and mention where they are located. 1

SECTION B

3. A white colored powder is used by doctors for supporting fractured bones. 2
   a) Write chemical name and formula of the powder.
   b) On mixing this powder with water, a hard solid mass is obtained.
   Write balanced chemical equation for the change.

4. Write any two methods to improve the efficiency of a solar cooker. 2

   OR

   State any two limitations and two advantages of hydro energy.

5. a) What name is given to the sequence of gradual changes over millions of years in which new species are formed. 2

   b) Name two human traits which show variation.

SECTION C

6. How ocean thermal energy is harnessed? Write one limitation and one advantage of ocean thermal energy. 3

7. Explain the role of fuse in series with any electrical appliance in an electric circuit. Why should a fuse with defined rating for an electric circuit not be replaced by one with a larger rating? 3

8. A 4.5 cm needle is placed 12 cm away from a convex mirror of focal length 15 cm. Give the location of the image and magnification. 3

OR

An object of height 5 cm is placed perpendicular to the principal axis of a concave lens of focal length 10 cm. If the distance of the object from the optical centre of the lens is 20 cm, determine the position, nature and size of the image.

9. Draw a ray diagram to show the position and nature of the image formed when the object is placed between the pole P and focus F of a concave mirror. Write the nature, and size of the image. 3

10. a) Based on electronic configuration, how will you identify the first and the last element of a period. 3
b) "Hydrogen occupies a unique position in modern periodic table. ''Justify the statement.
c) Give two reasons for the late discovery of noble gases.

11. a) Why does aqueous solution of acid conduct electricity? 3
b) Hydrochloric acid is a strong acid and ammonium hydroxide is a weak base. Explain.
c) During chlor-alkali process, where are chlorine, Hydrogen and sodium hydroxide produced?

OR

a) Why does tooth decay start when pH of the mouth falls below 5.5?
b) What is meant by "water of crystallization"? How would you show that blue color copper sulfate crystals contain water of crystallization?

12. a) Show the formation of Na_2O by transfer of electrons. 3
b) What are amphoteric oxides? Give an example.
c) Why is the melting point of NaCl high?

13. Explain how water and minerals are transported in plants? 3

OR

What is translocation? How does it take place in plants?

14. The genotype of a green stemmed tomato plant is denoted by "GG" and that of a purple stemmed tomato plant as "gg". When these two plants are crossed, 3
    a) what colour of stem would you expect in their F_1 progeny.
    b) give the percentage of purple stemmed plant if F_1 plants are self- pollinated.
    c) in what ratio would you find the green and purple colour in the F_2 progeny.

15. A gland secrets a particular hormone. The deficiency of this hormone in the body causes a particular disease in which blood sugar level rises. 3
    a) Name the gland and the hormone secreted by it.
    b) Mention the role played by this hormone.
    c) Name the disease caused due to the deficiency of this hormone.

SECTION D

16. a) A student sitting at the back bench in a class has difficulty in reading. 5
    b) What could be his defect of vision?
    c) Draw ray diagram to illustrate the defect.
    d) Write the causes of this defect and suggest the method to correct this defect.

OR

    a) What is dispersion of white light? What is the cause of dispersion?
    b) Name the colour of light which bends (i) the most and (ii) the least, while passing through a glass prism. Draw a ray diagram to justify the answer.

17. a) Name an instrument that measures the potential difference between two points in a circuit. 5
    b) How it is connected in a circuit and give reason for your answer.
    c) Define the SI unit of potential difference.
    d) Draw the circuit symbols for (a) a variable resistor (b) a plug key which is closed.

18. 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.

19. a) Name the main ore of mercury. Give balanced chemical equations to obtain mercury from this ore. 5
    b) Name the method used to extract metals of high reactivity.
    c) State the constituents of solder. Which property of solder makes it suitable for welding electrical wires?

20. a) Differentiate between sexual and asexual reproduction (two points each) 5
    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.

21. a) Differentiate between pepsin and amylase based on the organ where they are produced and their action. 5
    b) Mention any two structural modification in the small intestine, which helps in absorption of digested food.
    c) What is the role of mucus in the stomach?

OR

a) Draw a diagram of human excretory system and label kidney, ureters, urinary bladder and renal artery on it.
b) State in brief the function of i) renal artery ii) kidney iii) ureter iv) urinary bladder

SECTION E

22. Define principal focus of a concave mirror. Using a ray diagram show the formation of principal focus for a concave mirror. 2

23. An ammeter has 20 divisions between mark 0 and mark 2 on its scale. Find the least count of the ammeter. 2

24. 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

OR

i) The pH of solutions A and B are 3 and 10 respectively. Identify acidic and basic solutions.
ii) Identify the color of pH paper dipped in Ammonia solution.

25. 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

26. A student is observing a permanent slide showing sequentially the different stages of asexual reproduction taking place in the yeast. Name the process and draw diagrams showing his correct observation in a proper sequence. 2

27. Name any two processes which get affected by opening and closing of stomata 2

OR

a) What will happen if dry seeds are used in place of geminating seeds to study that CO_2 is produced during aerobic respiration. Give reason in support of your answer.
b) Mention the role of the chemical taken in the small test tube in the experimental set up.

End of the Question Paper