

Roll Number

Code Number 86



INDIAN SCHOOL MUSCAT FIRST MID-TERM EXAMINATION

SCIENCE

CLASS: X

Sub. Code: 086

Time Allotted: 3 Hrs

26.09.2017

Max. Marks: 80

General Instructions:

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. Define least distance of distinct vision for human eye. 1
2. State any two ways to prevent the oxidation of foods containing fats and oil. 1
3. a) In the reaction below, identify the substance oxidized and reducing agent 2
$$\text{MnO}_2 + \text{Al} \rightarrow \text{Al}_2\text{O}_3 + \text{Mn}$$

b) Barium chloride solution reacts with sodium sulphate solution to give a white precipitate of barium sulphate and a solution of sodium chloride. Write a balanced chemical equation with state symbols.
4. How do the guard cells regulate opening and closing of stomatal pores? 2
5. Rate of breathing is faster in aquatic organisms than terrestrial organisms. Give reason 2
6. i. State Snell's law of refraction. 3
ii. Define the S I unit of power of a lens.
iii. How can a concave mirror be used as a shaving mirror.

7. i. Define lateral displacement in a glass slab. 3
 ii. State two factors on which lateral displacement depends.
 iii. Draw a diagram to show dispersion of white light when it passes through a prism.
8. i. What is meant by the statement that the refractive index of water is 1.33. 3
 ii. A person is not able to see distinctly the prints in a newspaper.
 a. Identify the defect.
 b. Name the lens used to correct the defect.
 c. State two causes for this defect.
9. i. Write the function of the following parts of human eye : (a) Iris (b) Ciliary muscles. 3
 ii. (a) What is meant by scattering of light?
 (b) State the relationship between the wave length of light and the size of the particle causing the scattering.
10. Give reason 3
 a) Metals like sodium and potassium are stored in kerosene oil
 b) Ionic compounds in solid state do not conduct electricity
 c) Iron is mixed with nickel and chromium.

OR

- a) What are amalgams?
 b) What happens to iron when exposed to moist air? Explain a chemical method by which this can be prevented?
11. a) A solution changes blue litmus red. What is the nature of the solution and what pH range will the solution show? 3
 b) What happens when chlorine is passed over dry slaked lime?
 c) Name the gas evolved when metals react with dilute acids. How will you test this gas?
12. $2\text{FeSO}_4 \rightarrow \text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$ 3
 a) Identify and define the type of chemical reaction.
 b) Give any two observations when the above reaction occurs.
13. What are the principle components of the blood? Mention any two functions of the blood related to transport. 3

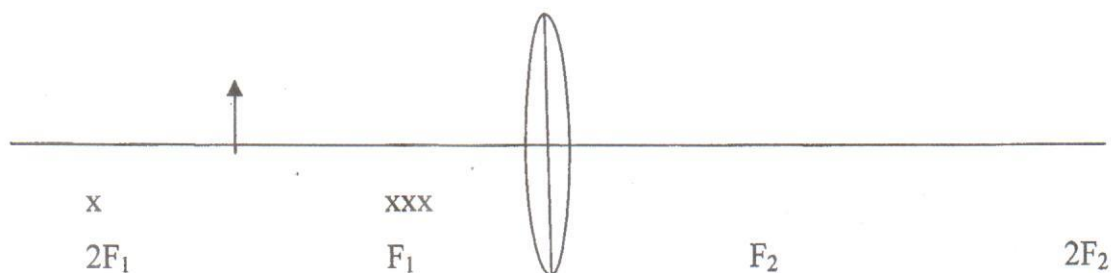
OR

- a) Mention the role of valves in maintaining blood flow in the heart.
 b) Give the differences between an artery and a vein.(any two points each)

14. Villi are richly supplied with blood vessels and take the absorbed food to each every cells of the body where it is utilized. Mention the name of the major absorbed nutrients and their utilization. 3
15. Define excretion. What are the methods used by plants to get rid of excretory products? 3
16. i. With help of a diagram explain the formation of rainbow. 5
 ii. The near point of a hypermetropic eye is 1 m. What is the power of lens required to correct this defect. Assume the near point of a normal eye is 25 cm.
- OR**
- i. Two lens of power -2.5 D and +1.5 D are placed in contact. Find the total power of the combination of lenses. Calculate the focal length of this combination.
- ii. a) How does sky appear for an astronaut in space. Why?
 b) Red light is used as traffic lights. Give reason.
 c) Why does the sky appear reddish at sunrise and sunset?
17. i. Find the position of image formed when an object is placed at a distance of 15 cm from a concave mirror of focal length 10 cm. 5
 ii. Draw a ray diagram to show how a convex mirror can be used as a rear view mirror.
 Also state the position, nature and size of the image.
 iii. Define principal focus of a concave mirror.
18. a) Explain the chlor-alkali process with a balanced equation. 5
 b) Name the products obtained in the chlor alkali process.
 c) Give one use of each of the products obtained in the above process.
19. a) Show the formation of magnesium chloride by the transfer of electrons. 5
 b) Differentiate between roasting and calcination.
 c) During extraction of metals, electrolytic refining is used to obtain pure metals. Which material will be used (i) as anode (ii) as cathode (iii) as an electrolyte? Also, in the above electrolytic cell, where is the pure metal obtained after passing electric current?
20. a) Why is circulation of blood in man known as double circulation? 5
 b) Which blood cell in human blood carries haemoglobin? What is its average life span?
 c) Why does wall of left ventricle of the human heart is thicker than right ventricle ?
21. Draw a neat labelled diagram for reflex arc and explain their pathway. 5
 Define reflex action? Give two examples for reflex action from our daily life.

SECTION B

22. A student obtained a sharp image of a candle on a screen using a convex lens. Now he wants to focus on a distant lamp. In which direction should the lens be moved with respect to the screen to get a sharp image? Justify your answer. 2
23. Observe the following figure where an object is placed between F_1 and $2F_1$ in front of a convex lens. 2



Complete the ray diagram and state the position, nature and size of the image formed.

24. Four colorless samples A, B, C and D turned pH paper red, pink, blue and green respectively. Arrange the samples in the order of decreasing pH. 2
25. Iron nail is dipped in copper sulphate solution for 30 minutes. What color changes will you observe and why? 2
26. Which one of the following is the correct set of three precautions for setting up the experiment to demonstrate that carbon dioxide is evolved during respiration? 2
- Air tight set up, delivery tube dips in water in the beaker, flask has seeds which have just germinated
 - Thick thread holding KOH test tube, air tight flask, delivery tube above water in the beaker
 - Germinating seed under water in the flask, set up not air tight, delivery tube above water level in the beaker
 - Delivery tube touching bottom of water, KOH test tube held by thick thread, Germinating seeds covered by water
27. Given below are the steps in the preparation of a temporary mount of a stained leaf peel to observe stomata 2
- Cover the material with a cover slip
 - Bloat out the excess stain or water with blotting papers
 - Remove the peel from the ventral surface of the leaf

iv) Place it on clean glass slide and add a drop of safranin stain.

The correct sequence of steps are

- a) iii) , iv), ii) , i)
- b) iii) , iv) , i) , ii)
- c) ii) , iii) , ii) , i)
- d) i) , ii) , iii) , iv)

End of the Question Paper