



INDIAN SCHOOL MUSCAT

Third Preliminary Examination

SCIENCE

CLASS: X

Sub.Code: 086

Time Allotted: 3 Hrs

12.02.2018

Max.Marks: 80

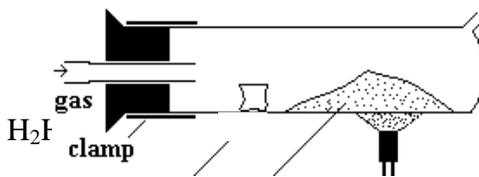
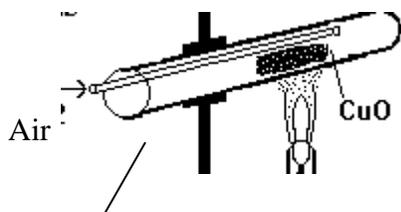
General Instructions :

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 | Name the cells that surround a stoma in leaf. | 1 |
| 2 | How does Spirogyra reproduce? | 1 |
| 3 | The atomic numbers of three elements X,Y& Z are 7,15 and 17 respectively. Which two of these elements will show similar chemical properties? Why? | 2 |
| 4 | Write any two methods in which the efficiency of a solar cooker can be improved? | 2 |
| 5 | How much current will an electric bulb draw from 220 V source if the resistance of the bulb is 1200 ohm? If in place of bulb, when a heater is used the current drawn is 2.2 A. Calculate the resistance of the heater. | 2 |
| 6 | An object of height 2 cm is placed perpendicular to the principal axis, at a distance of 10 cm from a convex mirror. The mirror has a focal length 15 cm. Find the position and size of the image. | 3 |

- 7 (i) What is hypermetropia? 3
 (ii) Write the cause of hypermetropia?
 (iii) Draw the ray diagram showing how hypermetropia is corrected?
- 8 A reddish brown powder 'Z' is heated in the presence of air in glass tube A. 3



Glass tube A

Glass tube B CuO

- a) Identify Z and the colour of the CuO formed in glass tube A.
 b) What type of reaction takes place in glass tube B? Write the chemical equation.
- 9 Given below are some elements of the Modern Periodic table. 3
 ${}_6\text{C}$, ${}_8\text{O}$, ${}_{10}\text{Ne}$, ${}_{11}\text{Na}$, ${}_{14}\text{Si}$
- a) Select the element that has one electron in the outermost shell and write the electronic configuration.
 b) Select two elements that belong to the same group. Give reason for your answer.
 c) Select two elements that belong to the same period. Which one has bigger atomic size?
- 10 a) How is glottis different from epiglottis? State their function. 3
 b) Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?

OR

State the function of

- a) pulmonary artery
 b) Red blood cells
 c) Blood Platelets
- 11 a) Distinguish between acquired and inherited traits giving one example of each 3
 b) What are homologous organs? Give an example
- 12 Name the device that converts electrical energy into mechanical energy. Draw the labeled diagram and write the working principle of this device. 3

OR

- (i) How is an ammeter connected in an electric circuit? Give reason.
 (ii) List out advantages of parallel combination of appliances over series combination in domestic circuit.
- 13 a) What is universal indicator? 3

b) The gas X obtained at anode during electrolysis of brine when passed on dry slaked lime gives compound Z, used for disinfecting drinking water.

i) Identify the gas X and the process involved.

ii) Name the compound Z and write its molecular formula.

OR

a) Do basic solutions also have H^+ (aq) ions? Then why are these basic?

b) Which of the given salts have pH more than 7?

i) washing soda ii) copper sulphate iii) sodium acetate iv) ammonium chloride.

c) A dry pellet of a common base reacts with HCl to form salt and water. Define the type of reaction involved.

14 Draw a simple diagram a potted plant showing positively geotropism and positively phototropism. Name a hormone involved in tropic movements. 3

15 A woman has only daughters. Analyse the situation genetically and provide a suitable explanation. 3

16 (i) With the help of an activity, explain the method of inducing electric current in a coil with a moving magnet. 5

(ii) State the rule used to find the direction of electric current thus generated in the coil.

(iii) Two circular coils P and Q are kept close to each other, of which coil P carries a current. What will you observe in Q if the current in coil P is changed?

17 a) Name the acid present in the preservative used in pickles. Write its molecular formula. 5

b) How can we yield this acid from alcohol? Write the chemical equation.

c) Write the next two homologues of C_2H_5OH and list any two characteristics of this series of compounds.

OR

a) What is hydrogenation?

b) What is its Industrial application?

c) Draw the electron dot structure of i) propane and ii) Carbon dioxide.

18 1) Describe how decomposers facilitate recycling of matter in order to maintain balance in the ecosystem 5

2) "Damage to the ozone layer is a cause for concern" Justify this statement. Suggest any one step to limit this damage.

OR

- 1) Why forests are considered “biodiversity hotspots”? List four measures that can be taken to conserve forests?
- 2) List any two advantages associated with water harvesting at community level.
- 19 (i) Define principal focus for a convex mirror and a concave mirror. (2) 5
- (ii) Draw a ray diagram and also state the position, relative size and the nature of image formed by a concave mirror when the object is placed at the centre of curvature of the mirror.
- 20 a) What is Corrosion? Give any two methods of preventing corrosion. 5
- b) Describe an activity to show the necessary conditions needed for rusting.
- 21 (a) Identify the glands that secrete (i) testosterone (ii) thyroxin 5
- (b) Explain with an example how the timing and amount of hormone secreted are regulated in human body.
- (c) Smita’s father has been advised by a doctor to reduce his sugar intake. (i) Name the disease he is suffering from and name the hormone whose deficiency causes it. (ii) Identify the gland that secretes it and mention the function of this hormone.

SECTION B

- 22 Define least count of an instrument. An ammeter has 20 divisions between mark 0 A and mark 2 A on its scale. Calculate the least count of the ammeter. 2
- 23 Draw ray diagrams showing the formation of principal focus for convex lens 2
- 24 Two beakers A and B contain Iron sulphate solution. What do you observe when a small piece of copper is placed in beaker A and a small piece of zinc is placed in beaker B? Why? 2
- 25 a) In the preparation of soap what is the nature of the mixture used? 2
- b) Why common salt is added to the saponification mixture?
- 26 Before most of the photosynthetic experiments de-starching the plant is a must. Why is this step necessary for performing the experiment to prove that light is necessary for photosynthesis. How is it done? 2
- 27 A student while setting up the experiment to show that CO_2 is evolved during respiration committed some errors. The errors committed are 2
1. Instead of potassium hydroxide, sodium hydroxide was taken in the test tube hung in the conical flask
 2. Instead of germinating seeds, in the conical flask seeds were non germinating and dry.
- What would be the result of the experiment?

End of the Question Paper