



# INDIAN SCHOOL MUSCAT

## Third Preliminary Examination

### SCIENCE

Sub.Code: 086

CLASS: X

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 Which is the cell organelle present in guard cell is absent in epidermal cell? 1
- 2 Why regeneration is not considered as same as reproduction in most organisms? 1
- 3 Two elements X and Y have electronic configuration 2,8,1 and 2,8,7 respectively. Name the family to which X and Y belong and write the formula of the compound formed between them. 2
- 4 Write any two advantages and any two limitations of harnessing wind energy on a large scale. 2
- 5 An electric iron has a rating of 750 W ,220 V. Calculate the 2
  - (i) current flowing through it.
  - (ii) Its resistance when in use.
- 6 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 lens is 20 cm, determine the position and magnification of the image. 3
- 7 (i) What are the values of (a) far point and (b) near point of vision for a normal adult person? 3

- (ii) A student has difficulty in reading the black board while sitting at the back seats. What could be this defect of vision?
- (iii) Draw a ray diagram to illustrate this defect.
- 8 Copper electrode is used in the refining of copper from copper nitrate solution. 3
- a) Name the process and the impurities obtained.
- b) Can silver electrode be used in the refining of copper from copper nitrate solution. Justify your answer.
- 9 a) State Mendeleev's Periodic law. 3
- b) What were the two criteria used by Mendeleev in making the periodic table?
- c) Why there's no mention of noble gases in Mendeleev's Periodic table?
- 10 Give reason for the following: (i) Glottis is covered by epiglottis, (ii) Lung alveoli are covered with blood capillaries, (iii) The wall of trachea is supported by cartilage rings. 3
- OR**
- List three differences between arteries and veins.
- 11 (a) Name the part of brain which controls (i) voluntary action, (ii) involuntary action. 3
- (b) What is the significance of the peripheral nervous system? Name the components of this nervous system and distinguish between the origins of the two.
- 12 Name the device that converts mechanical energy into electrical energy. Draw the labelled diagram and write the principle of working of this device. 3
- OR**
- i) What is the function of earth wire in domestic electrical circuits?
- ii) Explain what is short circuiting an electric supply.
- iii) What is the usual current rating of the fuse wire in the line to feed (a) Lights and fans? (b) Appliances of 2kW or more power?
- 13 a) The pH of the solutions A,B&C are 7, 2,6.5 respectively. Arrange them in the increasing order of the  $H^+$  ion concentration. 3
- b) How do chocolate and sweets effect the pH in our mouth and what is the role of the toothpaste in preventing tooth decay?
- OR**
- a) What is water of crystallization?
- b) 'The water of crystallization gives the salt crystals its colour'. Explain with an example.
- 14 All the human races like Africans, Asians, Europeans, Americans and others might have evolved from a common ancestor. Provide a few evidences in support of this view. 3

- 15 With the help of a Mendelian cross , find out the progeny of F1 and F2 generations respectively in a cross between a pea plant with violet flowers and a pea plant with white flowers. Use the symbols WW for violet and ww for white trait. 3
- 16 (i) With the help of a labeled circuit diagram describe an activity to illustrate the pattern of the magnetic field lines around a straight current carrying long conducting wire. 5
- (ii) Name and state the rule that is used to find the direction of magnetic field associated with a current carrying straight conductor.
- (iii) Write any two factors on which the strength of magnetic field produced by a current carrying straight conductor depends?
- 17 a) Give any 2 differences between alkanes and alkynes. 5
- b) Ice cream contains artificial flavours.
- i) Name the compound used in these flavours?
- ii) What happens when these compounds are hydrolysed with an alkali? Write the chemical equation
- OR**
- a) What is Allotropy? List any two differences between the allotropes of Carbon.
- b) Draw the structures of i) isobutane ii) Cyclopentane
- 18 1. "If we excessively use pesticides to protect the crop from diseases, then it may cause long term damages." Justify this statement. Also explain the harmful effect to man and environment 5
2. Which category of organisms forms the starting point of a food chain? Mention the percentage of light energy that plants can utilize.
- OR**
- a) What do you understand by "Watershed Management"? List any two advantages of watershed management.
- b) "Human beings occupy the top level in any food chain." What are the consequences of this on our body?
- 19 (i) State laws of refraction of light. (2m) 5
- (ii) Draw the ray diagram of refraction of light when it passes through a rectangular glass slab.
- (iii) Define lateral displacement and mention one factor on which lateral displacement depends.
- 20 A metal X is found in nature as  $XCO_3$ . It is used in galvanizing Fe articles. 5
- a) Name the metal X
- b) Explain how the metal X can be extracted from its carbonate ore.

c) A student added a few pieces of metal X to a test tube of HCl solution. Write the balanced chemical equation for the reaction involved. How can he test the gas evolved?

21 a) 5

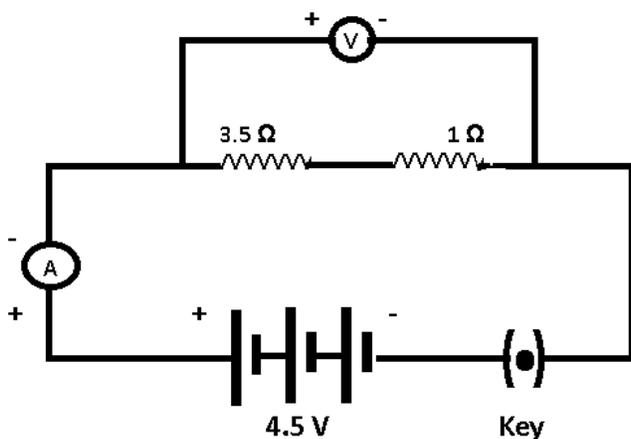
- i) Draw a neat diagram of human brain and
- ii) Label Medulla and Cerebellum
- iii) Write the functions of the above mentioned parts

b) “Both overproduction and underproduction of Growth hormone leads to disorders in the body.” Explain

**SECTION B**

22 Draw the ray diagram for the refraction of light through a triangular glass prism. Mark (i) angle of incidence (ii) angle of emergence in the diagram. 2

23 Find the ammeter reading for the circuit shown in figure. 2



24 What do you observe when you add iron nail to a test tube containing: 2

- a) Copper sulphate solution
- b) Ferrous sulphate solution
- c) Zinc sulphate solution
- d) Aluminium sulphate solution

25 a) The soap solution was added to the given water samples 2

A-Distilled water, B underground water and C-Distilled water & CaSO<sub>4</sub>. Which of the given water sample will produce the maximum foam and which will give rise to scum.

b) What is scum?

26 You have a jute bag full of vegetable such as carrot, ginger, potato, sweet potato, radish, etc. 2

Identify a pair of vegetable represent the correct analogous structures. Give reason why they are analogous structures.

27 What precautions would you take while performing the experiment, “Light is necessary for photosynthesis”? Write any two precautions. 2

**End of the Question Paper**