

COMMON PRE-BOARD EXAMINATION 2017-2018

SCIENCE

CLASS: X

Time Allowed: 3 hours

Maximum Marks: 80

General Instructions

- 1 *The question paper comprises two sections, A and B. You are to attempt both the sections.*
- 2 *All questions are compulsory*
- 3 *All questions of section A and B are to be attempted separately.*
- 4 *There is an internal choice in two questions of three marks each and one question of five marks*
- 5 *Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.*
- 6 *Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.*
- 7 *Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.*
- 8 *Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.*
- 9 *Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief*

SECTION A

- | | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 1 | What is saliva? State its role in the digestion of food? | 1 |
| 2 | Name the 'blob' that develops at the tip of the sporangiophore in Rhizopus | 1 |
| 3 | a) What do you mean by redox reaction. b) Identify the substance oxidized and substance reduced in the given chemical equation $\text{MnO}_2 + 4\text{HCl} \longrightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$ | 2 |
| 4 | List two reasons which limit the usage of solar cells for harnessing energy for domestic use? | 2 |
| 5 | "A ray of light incident on a rectangular glass slab immersed in any medium emerges parallel to itself". Draw a diagram to justify the statement. | 2 |
| 6 | How do Mendel's experiments show that traits may be dominant or recessive? | 3 |
| 7 | The image of an object formed by a lens is of magnification -1. If the distance between the object and image is 60 cm, what is the focal length of the lens? If the object is moved 20 cm | 3 |

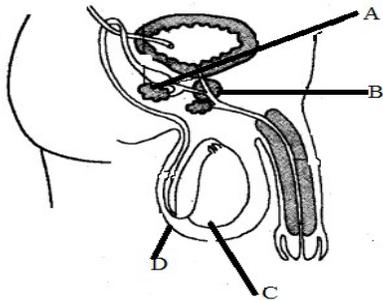
towards the lens, where would the image be formed? State reason and also draw a ray diagram in support of your answer

- 8 a) With the help of an activity show that water is necessary for acids to produce hydrogen ions. 3
b) Show the dissociation of HCl in water with the help of an equation.

OR

- a) What happens when metal carbonates react with acids, give example with suitable equation for the reaction?
b) How will you test the presence of carbon dioxide gas? What happens when excess of carbon dioxide is passed? Give suitable chemical equation for the above reaction.

- 9 a) Label the parts A,B,C and D 3
b) Write the functions of the parts labelled as A,B and D



- 10 Explain the following: 3
(a) The elements of electric heating devices such as bread toasters and electric iron are made of an alloy rather than pure metal.
(b) Series arrangement is not used for domestic circuits.
(c) Copper and aluminium wires are usually employed for electricity transmission.

- 11 What is short circuiting of an electric circuit? An electric motor of 1.5 KW power rating is operated in a domestic electric circuit of current rating 5A. What would happen when it is switched ON? Give reason for your answer. 3

OR

A coil of insulated copper wire is connected to a galvanometer. What would happen

If a bar magnet is

- (i) Pushed into the coil
(ii) Withdrawn from inside the coil?
(iii) Held stationary inside the coil?

- 12 a) Draw the structure of benzene and write its formula. 3
b) Show the formation of Na_2O by the transfer of electrons. Identify the type of bond formed.

- 13 Differentiate between Modern periodic table and Mendeleev's periodic table.

- 14 Explain the ways by which evolutionary relationships can be traced. 3

OR

What is reflex action and give one example? Name the part of nervous system that controls this action.

- 15 You were standing on the road side, then you saw a family travelling in a car. An ambulance carrying a patient for dialysis was travelling behind the car. The driver of the car brought his 3

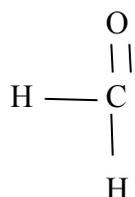
car to one side of the road and allowed the ambulance to overtake.

- What is dialysis?
- What is the principle behind dialysis?
- What value was shown by the driver?

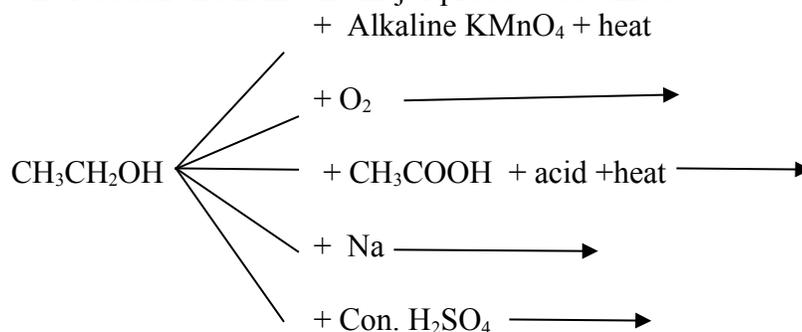
- 16 (a) A person cannot read newspaper placed nearer than 50 cm from his eyes. Name the defect of vision he is suffering from. Draw a ray diagram to illustrate this defect. List its two possible causes. Draw a ray diagram to show how this defect may be corrected using a lens of appropriate focal length. 5
- (b) We see advertisements for eye donation on television or in newspaper. Write the Importance of such advertisements.

- 17 5
- Draw a schematic labelled diagram of domestic electric circuit.
 - Why is it necessary to provide-
 - A fuse in an electric circuit
 - An earth wire to electric application metallic body? Explain.

- 18 5
- Define homologous series.
 - How do the physical and chemical properties change in a homologous series?
 - Write the next higher homologue for C_2H_5OH and write its name.
 - Identify the functional group in the compound.



- 19 5
- Complete the reaction and name the major products obtained.



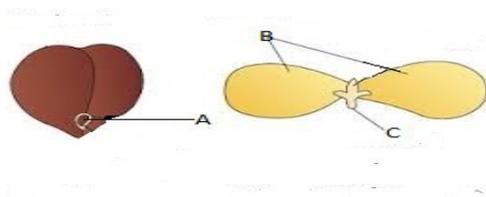
- 20 5
- 'The number of trophic levels in a food chain is limited'. Give reasons to justify this statement.
 - What are the problems created due to the construction of large dams?
- 21 5
- How does a feedback mechanism help to regulate blood sugar level in humans?
 - Write any two functions of a) Medulla b) Cerebellum

OR

Explain the structure of human heart with the help of a labelled diagram

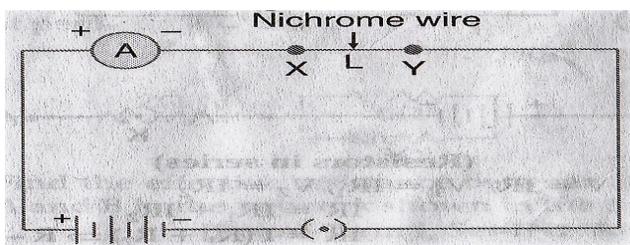
SECTION B

- 22 What would happen if a) KOH solution is not hung in conical flask during experiment. 2
b) Seeds are not kept moist during experiment.
- 23 What is the composition of vinegar? How will you test the nature of vinegar with the help of a chemical test? 2
- 24 a) Label the parts A,B and C 2
b) Write the function of the part labelled as B



- 25 Draw a path of light ray passing through a prism. Label angle of incidence and angle of deviation in the ray diagram 2
- 26 State Ohm's law. Draw a circuit diagram to verify this law indicating the positive and negative terminals of the battery and meters. Also show the direction of current in the circuit. 2

OR



In the above circuit, connect a nichrome wire of length L between points X and Y and note the ammeter reading.

(i) When this experiment is repeated by inserting another nichrome wire of the same thickness but twice the length ($2L$), What changes are observed in the ammeter reading?

(ii) State the changes that are observed in the ammeter reading if we double the area of cross section without changing the length in the above experiment.

Justify your answer in both the cases.

- 27 What changes can be observed when an aluminium strip is kept immersed in freshly prepared solution of ferrous sulphate? 2

