

## 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 Name the ‘blob’ that develops at the tip of the sporangiophore in Rhizopus. 1
- 2 Why the inner wall of stomach is not digested although the digestive enzyme can digest it? 1
- 3 State what happens when zinc granules are heated with sodium hydroxide. Write balanced chemical equation and the name of main product formed. 2
- 4 An object is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Calculate the position and nature of the image formed. 2
- 5 List two reasons which limit the usage of solar cells for harnessing energy for domestic use? 2
- 6 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- (ii) Withdrawn from inside the coil?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?

7 a) Derive an expression for Joule's law of heating. 3  
b) Give two examples for applications of heating effect of electric current.

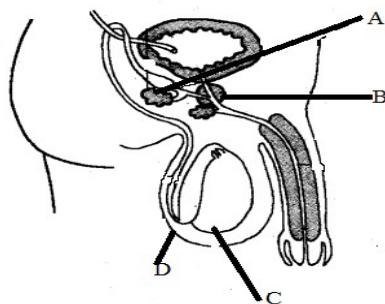
8 You were standing on the road side ,then you saw a family travelling in a car .An ambulance carrying a patient for dialysis was travelling behind the car. The driver of the car brought his car to one side of the road and allowed the ambulance to over take.  
a)What is dialysis?  
b)What is the principle behind dialysis?  
c)What value was shown by the driver?

9 a) How does the tendency to lose electron change as you go  
i. From left to right across a period?  
ii. Down a group?  
b) State modern periodic law. 3

OR

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

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



11 How do Mendel's experiments show that traits may be dominant or recessive? 3

OR

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

12 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 towards the lens, where would the image be formed? State reason and also draw a ray diagram in support of your answer. 3

13 a) What factors could lead to speciation?  
b) What are homologous organs? Give one example. 3

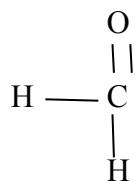
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| 14 | a) Write the preparation for the following chemicals from sodium chloride using balanced chemical equation<br>i) Sodium hydroxide    ii) Baking soda<br>b) Write two uses for each of above chemicals.   | 3 |
| 15 | a) What happens when metal carbonates react with acids, give example with suitable equation for the reaction?<br><br>b) How will you test the presence of carbon dioxide gas? What happens when excess of carbon dioxide is passed? Write balanced chemical equation for the above reaction. | 3 |
| 16 | What are magnetic field lines? List three characteristics of these lines. Describe in brief an activity to study the magnetic field lines due to a current flowing in a circular coil.   | 5 |
| 17 | a) ‘The number of trophic levels in a food chain is limited’. Give reasons to justify this statement.<br><br>b) What are the problems created due to the construction of large dams?   | 5 |
| 18 | a) How does a feedback mechanism help to regulate blood sugar level in humans?<br>b) Write any two functions of a) Medulla b) Cerebellum   | 5 |

OR

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

- 19 (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.  
(b)We see advertisements for eye donation on television or in newspaper. Write the Importance of such advertisements.

20 a. Define homologous series.  
b.How does the physical and chemical properties change in a homologous series?  
c. Write the next higher homologue for  $C_2H_5OH$  and write its name.  
d. Identify the functional group in the compound.

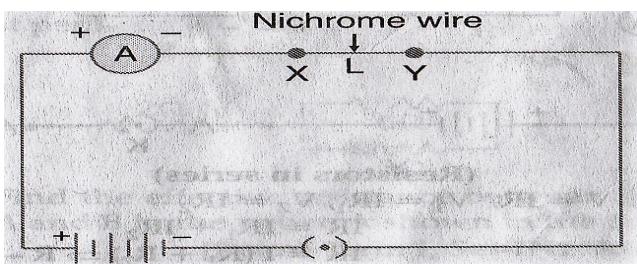


- 21 a) Explain the electrolytic refining of copper with diagram.  
OR  
a) What do you mean by corrosion?  
b) How do the following metals undergo corrosion; silver and iron?  
c) Suggest 2 methods to prevent corrosion.  
d) Identify the combination of elements present in the alloys: brass and solder.

## SECTION B



OR



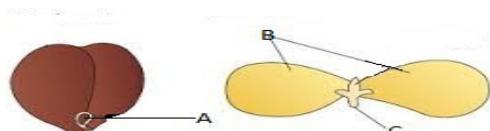
In the above circuit, connect a nichrome wire of length  $L$  between points X and Y and note the ammeter reading.

- (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.

- 26 i) Label the parts A,B and C  
ii)Write the function of the part labelled as B



- 27 Draw a path of light ray passing through a prism. Label angle of incidence and angle of deviation in the ray diagram. 2

