



INDIAN SCHOOL SOHAR
PRE-BOARD EXAMINATION- (2018 -19)
SUBJECT: SCIENCE

CLASS: X

Max. Marks: 80

DATE: 31 /01/2019

Duration: 3Hrs

General Instructions:-

- i. The question paper comprises of five Sections- **A, B, C, D and E**. You are to attempt all the sections.
- ii. Question paper consist of **27** questions. **All** questions are compulsory.
- iii. Internal choice is given in Sections- **B, C, D and E**.
- iv. Question numbers **1 to 2** in Section-**A** are **one** mark questions. These are to be answered in one word or in one sentence.
- v. Question numbers **3 to 5** in Section-**B** are **two** marks questions. These are to be answered in about 30 words each.
- vi. Question numbers **6 to 15** in Section-**C** are **three** marks questions. These are to be answered in about 50 words each.
- vii. Question numbers **16 to 21** in Section-**D** are **five** marks questions. These are to be answered in about 70 words each.
- viii. Question numbers **22 to 27** in Section-**E** are **two** marks questions based on practical skills. These are to be answered in brief.
- ix. There is no overall choice. However an internal choice will be provided in one question of two marks, three questions of **3** marks each, three questions of **5** marks each and three question (for assessing the practical skills) of **2** marks. Attempt only one of the choices in such questions.
- x. Wherever necessary the diagrams drawn should be neat and properly labelled.

SECTION-A

1. Give one example each: (a) Unisexual Flower (b) Bisexual Flower. 1
2. Identify the (a) oxidising agent and (b) reducing agent in the following reaction: 1

**SECTION-B**

3. List four measures that can be taken to conserve forests. 2
4. The organs **P** and **Q** of two animals have different structures but similar functions. On the other hand two organs **R** and **S** of two other animals have the same basic structures but different functions. 2
 - a) What are the organs **P** and **Q** known as? Give one example.
 - b) What are the organs **R** and **S** called? Give one example.
5. State Snell's law of refraction of light. For the same angle of incidence in a media A, B and C, the angles of refraction are 20°, 30° and 40° respectively. In which medium will the velocity of light be maximum?

OR

- a) Which property of a concave mirror is utilized for using them as shaving mirrors? 2
- b) Why do we prefer a convex mirror as a rear view mirror in vehicles?

SECTION-C

6. A white powder is added while baking breads and cakes to bake them soft and fluffy. Write the name of the powder. Name its main ingredients. Explain the function of each ingredient. Write the chemical reaction taking place when the powder is heated during baking. 3

7. Two elements X and Y of group 1 and 2 respectively in the same period of the periodic table. Compare them with respect to:
- the number of valence electrons in their atoms.
 - their valencies.
 - metallic character.
 - the size of their atoms.
 - the formulae of their oxides.
 - the formulae of their chlorides.
- 3

8. What are isomers? Draw all the structural isomers of pentane.

OR

Draw the structures of the following compounds:

- a) 2-Bromopropane b) Pentanal c) Butanone. 3

9. Consider the following food chain and answer the following questions:

Grass → Insect → Frog → Snake

- If 30000 J of solar energy is available with the sun, how much energy would be available with the frog?
 - State the law involved.
- 3

10. Two glands **A** & **B** which occur in pairs are present in the endocrine system. The pair of gland **A** is found only in females whereas the pair of gland **B** occurs only in males. The gland **A** makes and secretes hormones **C** whereas gland **B** makes and secretes hormone **D**, in addition to hormone, gland **A** makes gamete **E** whereas gland **B** makes gamete **F**.

- What are the glands A & B?
 - Name the hormone C & D.
 - Name the gametes E & F.
- 3

11. Two resistances of 3Ω and 6Ω are to be connected to a battery of 9V so as to obtain:

- minimum current
- maximum current in the circuit.

- How will you connect the resistances to the battery in each of the above cases?
 - Calculate the total current in the circuit in both the cases.
- 3

12. a) Why are coils of electric toasters and electric irons made of an alloy rather than a pure metal?

- b) A wire of length 'L' and resistance 'R' is stretched so that the length is doubled and area of the cross section is halved. How will resistance and resistivity change? 3

13. You have two lenses L_1 and L_2 of powers +5D and -10D respectively. State the nature and focal length of each lens. Explain which one of the two lenses will form a virtual and magnified image of an object placed at 15cm from the lens. Draw the ray diagram in support of your answer.

OR

A student has focused the image of a candle flame on a white screen using a concave mirror.

The situation is as given below:

Length of the flame = 1.5 m

Focal length of the mirror = 12cm

Distance of the flame from the mirror = 18cm

If the flame is perpendicular to the principle axis of the mirror, then calculate the following:

- Distance of the image from the mirror.
- Length of the image.

If the distance between the mirror and flame is reduced to 10cm, then what would be observed on the screen. Draw a ray diagram to justify your answer for this situation. 3

14. Large scale use of nuclear energy becomes prohibitive due to some hazards. Write any three hazards associated with nuclear power plant. 3

15. Explain the process of double circulation in human beings. How is it important?

OR

Draw a well labelled diagram to show germination of pollen grain on the stigma. 3

SECTION-D

16. a) List in tabular form two physical and two chemical properties on the basis of which ethanol and ethanoic acid can be differentiated.

b) Draw the electron dot structures of Ethanol and Ethanoic acid. 5

17. State reasons for the following:

a) Sulphide ore of a metal is first converted to its oxide to extract the metal from it.

b) From dilute hydrochloric acid, zinc can liberate hydrogen gas but copper cannot.

c) Iron articles are galvanized.

d) Ionic compounds in general have high melting and boiling points.

e) Tarnished copper vessels are cleaned with tamarind juice.

OR

a) What is meant by water of crystallisation? How would you show that copper sulphate crystal contains water of crystallization?

b) Classify the following salts as acidic, basic or neutral:

Potassium sulphate, Ammonium chloride, Sodium carbonate, Sodium chloride.

c) What change in colour is observed, when silver chloride is left exposed to sunlight? State the type of chemical reaction in this change and also write the chemical equation involved. 5

18. a) How did Mendel prove that tallness is the dominant trait and dwarfness is recessive in a Pea plant? Explain with the help of a monohybrid cross.

b) Why did Mendel select pea plant for his experiments? (2 points)

c) What is the phenotypic ratio & the genotypic ratio for this cross? 5

19. a) Mention any four main types of growth dependent movements in plants and give one example for each.

b) Name the following: i) A hormone that promotes cell division.

ii) A growth inhibiting hormone.

OR

Identify the following methods and give one example for each:

a) Process in which reproduction takes place by breaking up of parent into fragments.

b) Process of dividing of organisms into many cells simultaneously.

c) Process of reproduction by formation of bud on parent body.

d) Process of reproduction by formation of spores.

e) Process used by multicellular organisms to reproduce by cutting into many pieces, each piece forms a new individual. 5

20. a) What is dispersion of white light? State its cause.
 b) Why do stars twinkle? Explain.
 c) Why does the sun appear reddish early in the morning? Will this phenomenon be observed by an astronaut on the Moon? Give reason to justify your answer. 5

21. A student fixes a sheet of white paper on a drawing board. He places a bar magnet in the centre of it. He sprinkles some iron filings around the bar magnet. Then he taps the board gently. Now answer the following questions:

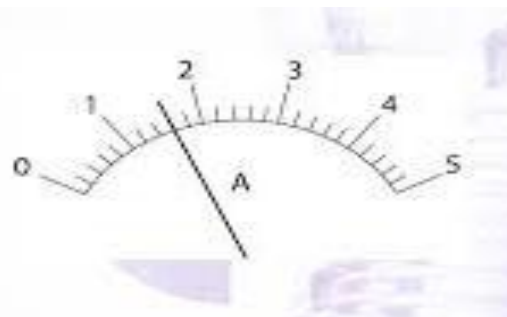
- a) What does the student observe? Draw a diagram to illustrate your answer.
 b) Why do the iron filings arrange in such a pattern?
 c) What does the crowding of the iron filings at the ends of the magnet indicate?
 d) Write any two properties of magnetic field lines.

OR

- a) With the help of a diagram describe an activity to demonstrate the pattern of magnetic field lines around a straight conductor carrying current.
 b) State the rule to find the direction of magnetic field associated with a straight conductor carrying current.
 c) What is the shape of a current carrying conductor whose magnetic field pattern resembles that of a bar magnet? 5

SECTION-E

22. The current flowing through a resistor connected in an electrical circuit and the potential difference developed across its ends are shown in the given diagrams. Find the value of resistance of the resistor in ohms. 2



23. To find the image distance for varying object distances in case of a convex lens of focal length 15cm, a student obtains on screen a sharp image of a bright object by placing it at 20cm distance from the lens. After that he gradually moves the object away from the lens and each time focuses the image on the screen.
- a) In which direction – towards or away from the lens does he move the screen to focus the object?
 b) How does the size of the image change?
 c) At what distance does he obtain the image of magnification -1?
 d) How does the intensity of image change as the object moves farther and farther away from the lens? 2
24. What is observed when a solution of potassium iodide is added to a solution of lead nitrate? Name the type of reaction. Write a balanced chemical equation to represent the chemical reaction. 2

25. A student detected pH of four unknown solutions A, B, C and D as follows: 11,5,7,2. Predict the nature of the solutions.

OR

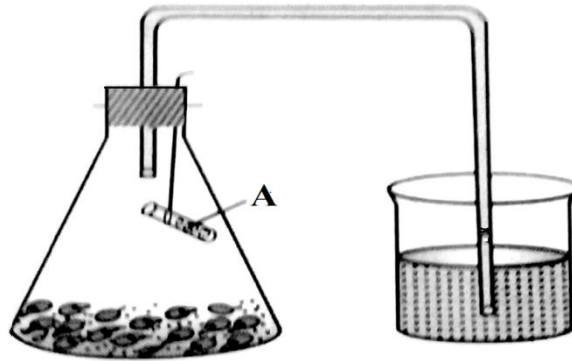
Differentiate between soft water and hard water by a suitable chemical test.

2

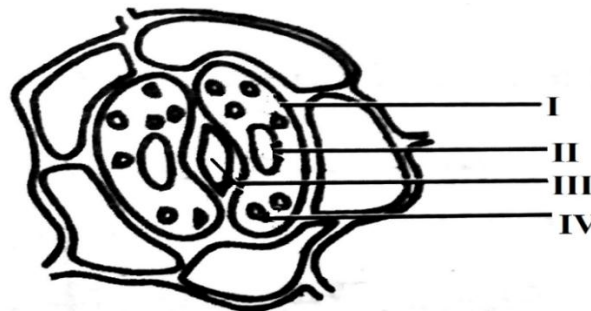
26. An experimental set-up is given below to demonstrate that carbon dioxide is given out during respiration.

- In this set-up what does test tube marked (A) contain? Mention its role in the experiment?
- Why does the level of water rise in the bent tube?

2



27. In the given diagram of the epidermal peel showing the stomata label the parts marked I, II, III and IV.



OR

A student draws the diagram of a dicot seed to show the different parts of its embryo. Label the parts marked A, B, C and D.

2

