

**Goa Board  
Class X Science  
Term II  
Sample Paper – 8**

**Total time: 3 hrs****Total marks: 90****General instructions:**

1. The question paper comprises of **two sections, A and B**. You are to attempt both the sections.
2. All the questions of **Section-A** and **Section-B** are to be attempted separately.
3. Question numbers **1 to 3** in **Section - A** are **one mark** questions. These are to be answered in one word or one sentence.
4. Question numbers **4 to 6** in **section - A** are **two marks** questions, to be answered in about **30 words each**.
5. Question number **7 to 18** in **section-A** are **three marks** questions, to be answered in about **50 words**.
6. Question number **19 to 24** in **section-A** are **five marks** questions, to be answered in about **70 words**.
7. Question numbers **25 to 33** in **section-B** are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
8. Question numbers **34 to 36** in **Section B** are questions based on practical skills and are two marks questions.

**SECTION A**

1. Name the component of white light that deviates [1]
  - i. The least and
  - ii. The most while passing through a glass prism.
2. What change is observed when soap is tested with litmus paper (blue or red)? [1]
3. What is the condition for germination of pollen grain? [1]
4. What is water harvesting? Mention any two water harvesting structures. [2]
5. How do two eyes give a wider field view? [2]
6. Account for the following: [2]
  - (a) How is metallic character of an element expressed?
  - (b) Noble gases are placed in a separate group.

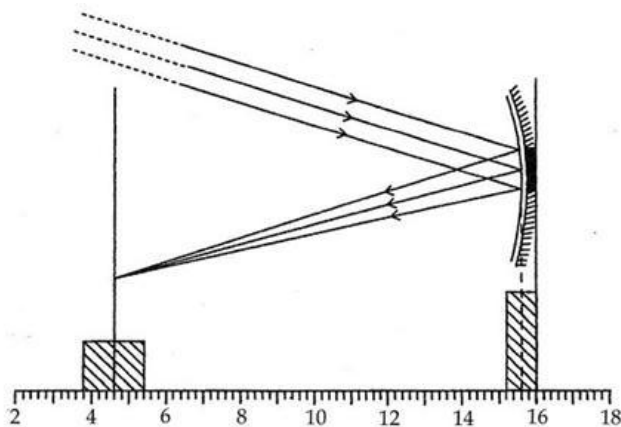
7. [3]  
(a) Give two examples of decomposers present in any ecosystem.  
(b) How is the presence of decomposers crucial in the ecosystem?
8. A 2 cm high object is placed at a distance of 20 cm from a concave mirror. A real image is formed at 40 cm from the mirror. Calculate the focal length of the mirror. Also, find the height of the image formed. [3]
9. [3]  
(a) Name the defect of vision in which the eye loses its power of accommodation due to old age.  
(b) What are rods and cones in the retina of an eye? Why our night vision is relatively poor compared to the night vision of an owl?
10. We mostly read in newspaper, that few students went for a picnic, but while boating one or two drowned in the river. The situation below can be the reason for this.  
Situation - While boating with parents, a child saw a beautiful fish in the lake. He tried to catch it, thinking that it is very closer to him but situation became worse when he drowned in the lake instead of catching it. Name the phenomenon that shows the apparent position of fish, explain it. What precautionary measures will you suggest while boating? [3]
11. [3]  
(a) What happens to the image distance in the eye, when we increase the distance of an object from the eye?  
(b) A person has normal vision, but he cannot distinguish between red-green colours. Why?
12. Consider the following elements: [3]  
 $^{20}\text{Ca}$ ,  $^8\text{O}$ ,  $^{18}\text{Ar}$ ,  $^{16}\text{S}$ ,  $^4\text{Be}$ ,  $^2\text{He}$   
Which of the above elements would you expect to be  
i. Very stable  
ii. In group 2 of the periodic table  
iii. In group 16 of the periodic table.  
Give reasons.
13. Give reasons for the following: [3]  
(a) Li and Na are considered as active metals.  
(b) Atomic size of Mg is less than that of Na.  
(c) Fluorine is more reactive than chlorine.

- 14.** [3]  
(a) State Modern periodic law.  
(b) How,  
i. Tendency to lose electron,  
ii. Valency of the elements varies along the period from left to right? Give reason to justify your answer.
- 15.** Explain budding in yeast with the help of a diagram. [3]
- 16.** Why must we conserve our forests? List any two causes for deforestation taking place. [3]
- 17.** Describe briefly three ways in which individuals with a particular trait may increase in a population. [3]
- 18.** Define 'artificial selection.' Comment on the purpose for which farmers selected the following vegetables to cultivate through artificial selection [3]  
(a) Cabbage (b) Broccoli  
(c) Cauliflower (d) Kohlrabi
- 19.** [5]  
(a) Explain analogous organs and homologous organs.  
(b) Identify the analogous and homologous organs amongst the following:  
Wings of an insect, wings of a bat, forelimbs of frog, forelimbs of a human.  
(c) Describe the mechanism that determines the sex of a child.
- 20.**  
(a) What is meant by 'power of a lens'?  
(b) State and define the S.I unit of power of a lens.  
(c) A convex lens of focal length 25 cm and a concave lens of focal length 10 cm are placed in close contact with each other. Calculate the lens power of this combination. [5]
- 21.** How can we correct Hypermetropia? [5]

22. [5]
- (a) Give the IUPAC name of the following:
- $\text{CH}_3\text{CH}_2\text{OH}$
  - $\text{CH}_3\text{CHBrCH}_3$
- (b) What is difference between the formulas of two successive members of a homologous series?
- (c) What kind of flame is produced when unsaturated hydrocarbons are burnt over a flame?
- (d) Give an example of an addition reaction. Write the chemical reaction also.
23. [5]
- (a) Draw a neat diagram of male reproductive system in humans and label the following parts on it:
- Vas deferens
  - Seminal vesicle
  - Prostate gland
  - Testis
- (b) Mention the function of prostate gland and seminal vesicles.
- (c) Name the male hormone and write its function.
24. What is the significance of fertilisation? [5]

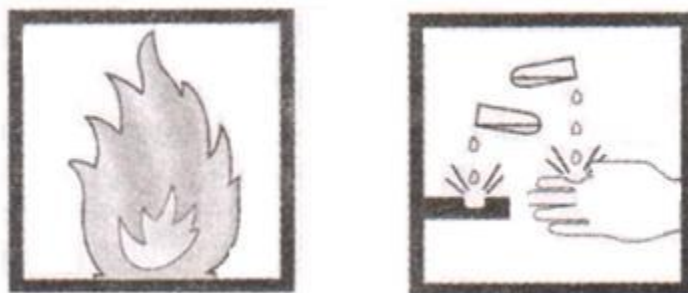
### SECTION B

25. A student determines the focal length of a device 'X' by focusing the image of a distant object on a screen placed on the same side as the object. The device 'X' is a [1]
- Concave lens
  - Convex lens
  - Concave mirror
  - Convex mirror
26. The focal length of the concave mirror in the experimental setup shown, equals [1]



- 10.3 cm
- 11 cm
- 11.7 cm
- 12.2 cm

27. The following symbols are usually shown on the bottles of commercial acetic acid. The symbols indicate that acetic acid is: [1]



- (a) Oxidizing and corrosive
- (b) Flammable and explosive
- (c) Flammable and corrosive
- (d) Flammable and radioactive

28. The figure given alongside illustrates the step leading to: [1]



- (a) Binary fission in Amoeba
- (b) Longitudinal binary fission in Paramecium
- (c) Transverse binary fission in Euglena
- (d) Transverse binary fission in Paramecium

29. Acetic acid is miscible with water in all proportions due to the formation of [1]

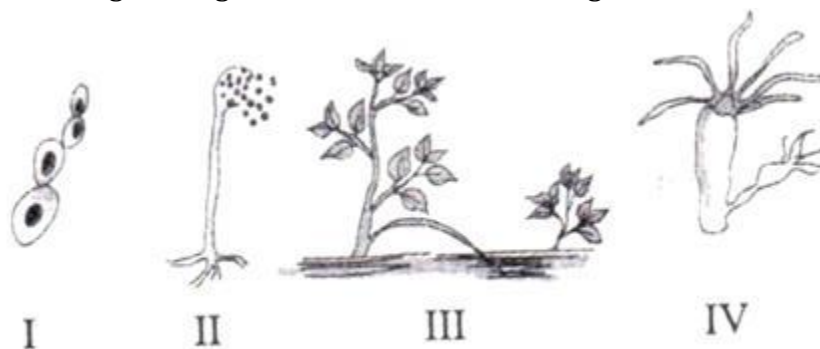
- (a) Ionic bonds with water molecules
- (b) Hydrogen bonds with water molecules
- (c) Metallic bonds with water molecules
- (d) Both ionic and metallic bonds with water molecules

30. A student added dilute Acetic acid to an unknown white solid (A) kept in a test tube. It was observed that a colourless gas (B) was evolved. The gas was passed through lime water which turned milky. The solid (A) and the gas (B) could be [1]

- (a) Solid A is  $\text{Pb}(\text{NO}_3)_2$  and the gas B is  $\text{NO}_2$
- (b) Solid A is  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  and the gas B is  $\text{SO}_2$
- (c) Solid A is  $\text{NaHCO}_3$  and the gas B is  $\text{CO}_2$
- (d) Solid A is  $\text{CH}_3\text{COONa}$  and the gas B is  $\text{O}_2$

31. Two of the following four figures that illustrate budding are

[1]



- (a) I and II
- (b) I and III
- (c) I and IV
- (d) II and IV

32. On heating ethanol in the presence of sulphuric acid, we get

[1]

- (a) Ethane
- (b) Ethene
- (c) Ethyne
- (d) Acetylene

33. Identify the mistake in the following sketch of budding in yeast.

[1]



- (a) Bud is shown to be smaller than parent cell
- (b) Nuclei are present in both bud and parental cell
- (c) Both parent and bud are shown as single cells
- (d) Bud is wrongly labeled

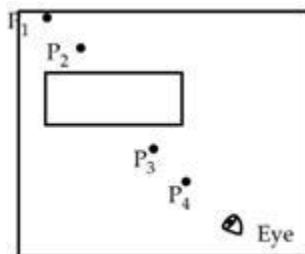
34. A student soaked 5 grams of raisins in 25 mL of distilled water in each of the two beakers A and B. Beaker A was maintained at 25°C and beaker B at 50°C. After one hour, the student observed that the water absorbed by the raisins was

[2]

- (a) Same in case of A and B
- (b) Less in case of A than in B
- (c) Exactly double in A, of that in B
- (d) Exactly four times in A, of than in B

35. How would you distinguish experimentally between an alcohol and a carboxylic acid? [2]

36. In the glass slab experiment shown below, four students A, B, C and D did the following : [2]



- A. kept his or her eyes far from the glass slab while placing both the pins  $P_3$  and  $P_4$
- B. kept his or her eyes close to the glass slab while placing both the pins  $P_3$  and  $P_4$
- C. kept his or her eyes close to the glass slab while placing pin  $P_3$  and far from the slab while placing pin  $P_4$
- D. kept his or her eyes far from the glass slab while placing pin  $P_3$  and close to the slab while placing pin  $P_4$

The correct procedure is that of student:

- (a) A
- (b) B
- (c) C
- (d) D