

**Goa Board
Class X Science
Term II
Sample Paper – 4**

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. Write the IUPAC names of: [1]
 - i. Ethyl alcohol
 - ii. Acetic acid
2. What is meant by near point of a human eye? [1]
3. What do you mean by the term 'variation'? [1]
4. How does metallic and non-metallic character of elements vary down a group in the Modern Periodic Table? [2]
5. How dams are useful for the society? Mention any two points. [2]
6. Give four characteristics of an image formed by a plane mirror. [2]

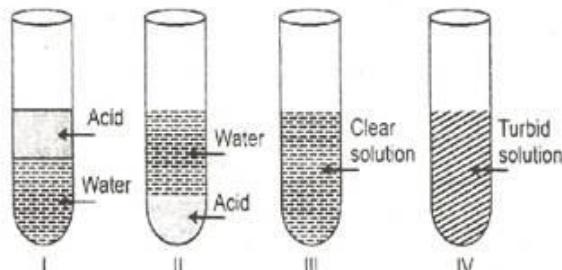
7. [3]
(a) How does a Bryophyllum plant reproduce?
(b) Name any two sexually transmitted diseases.
8. [3]
(a) State Mendeleev's Periodic Law.
(b) Why did Mendeleev leave gaps in his Periodic Table?
(c) Give any one limitation of Mendeleev's Periodic classification?
9. [3]
(a) Provide an example to show atmospheric refraction.
(b) What is vision? State the three common defects of vision.
10. [3]
(a) A concave mirror produces a three times enlarged image of an object placed at 10 cm in front of it. Calculate the radius of curvature of the mirror.
(b) What is a lens?
11. On a rainy day, Ram reached his grandfather's place in the village. On the way to the house, he saw a beautiful rainbow in the sky. In the night, he saw lots of twinkling stars in the clear sky. He was very excited on seeing these beautiful, natural phenomena, which he was unable to see in the city, where he lived with his father. Do you think that pollution in atmosphere affects the formation of rainbow and twinkling of stars? Do you agree with the fact that pollution free environment will strengthen such natural phenomenon in the cities as well. Elaborate. [3]
12. [3]
(a) A star seems higher than it actually is. Why?
(b) Which colours of the spectrum is least and most scattered?
13. [3]
(a) What is coliform?
(b) Give any two ways in which biodegradable substances would affect the environment.
14. Mention the names of various movements that have started to promote the concept of forest conservation. [3]
15. [3]
(a) How Archaeopteryx serves as a connecting link between birds and reptiles?
(b) What do you mean by the term evolution?

16. What are esters? How are they prepared? Give an example and write the chemical reaction involved. [3]
17. [3]
- Which property is the basis of classification of elements in the Long form of Periodic Table?
 - Why the atomic radius decreases on moving from left to right along a period?
 - Locate the following groups in the periodic table:
 - The alkaline earth metals.
 - Noble gases.
18. [3]
- What is pollination? Describe cross pollination and self pollination.
 - Why is variation beneficial for species?
19. [5]
- Name the following parts:
 - A funnel like structure near the posterior end of the ovary.
 - Birth canal
 - Small sac-like muscular structure that encloses testes.
 - The organ where foetus develops during gestation.
 - Why is the female reproductive system more complex than the male reproductive system?
 - Why in some cases vas deferens in male is blocked?
20. [5]
- If an object of 7 cm height is placed at a distance of 12 cm from a convex lens of focal length 8 cm, find the position, nature and height of the image.
 - Name the type of mirror used in the following situations:
 - Headlights of a car
 - Side view mirror of a vehicle
21. [5]
- What is scattering of light? Give two examples.
 - Provide an example to show atmospheric refraction.
 - What is meant by accommodation of eye?
22. [5]
- Why covalent compounds are generally poor conductors of electricity?
 - Name the gas evolved when ethanoic acid is added to sodium carbonate. How would you prove the presence of this gas?
 - Write the structural formula of two isomers of n- pentane C_5H_{12} .

23. [5]
- (a) Draw a diagram of carpel of a flower showing the process of fertilization.
- (b)
- What is meant by gestation?
 - Name any two ornamental plants produced by tissue culture.
 - In which structure are spores produced?
24. [5]
- (a) What is Natural Selection? Explain.
- (b) Why are thorns of the Bougainvillea plant and a tendril of the Passiflora plant considered homologous organs?

SECTION B

25. Anita obtained a sharp image of a distant window on a white screen by using a convex lens. In order to determine the focal length of the lens, Anita should measure the distance between the [1]
- Screen and the window only
 - Lens and the screen only
 - Lens and the window only
 - Lens and the screen and also between the tower and the screen.
26. For determining the focal length of a concave mirror by obtaining sharp and distinct image of a distant object, out of the following options a student should prefer which object [1]
- A burning candle kept at the distant edge of the laboratory table
 - Well lit grill of the laboratory window
 - A well lit distant budding
 - A distant tree
27. 5 ml each of acetic acid and water are mixed together and shaken well. The resulting mixture would appear as in [1]



- I
- II
- III
- IV

28. The reaction in which oxidising agents supply nascent oxygen for oxidation of alcohols to their respective acids is known as [1]

- (a) Addition reaction
- (b) Substitution reaction
- (c) Combustion reaction
- (d) Oxidation reaction

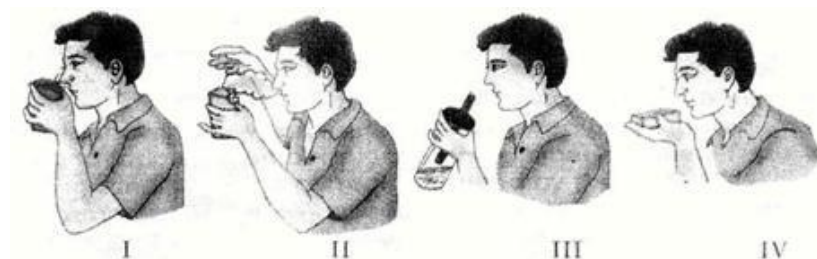
29. In conversion from ethanol to ethene, concentrated sulphuric acid is used as [1]

- (a) Oxidising agent
- (b) Reducing agent
- (c) Dehydrating agent
- (d) Precipitating agent

30. In Amoeba locomotion happens due to [1]

- (a) Legs
- (b) Flagella
- (c) Pseudopodia
- (d) Both (a) and (b)

31. The most appropriate method of testing the odour of a given liquid is : [1]



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

32. What happens to raisins during endosmosis? [1]

- (a) Swell up
- (b) Shrink
- (c) First swell up and then shrink
- (d) Remain same

33. Embryo in the seed is formed from the [1]

- (a) Zygote
- (b) Antipodal cells
- (c) Endosperm
- (d) Synergids

34. Study the different conclusions drawn by students of a class on the basis of observations of preserved/available specimens of plants and animals. [2]

- I. Potato and sweet potato are analogous organs in plants
- II. Wings of insects and wings of birds are homologous organs in animals.
- III. Wings of insects and wings of bats are analogous organs in animals.
- IV. Thorns of citrus and tendrils of cucurbita are analogous organs in plants.

The correct conclusions are:

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

35. In an experiment to trace the path of a ray of light passing through a rectangular glass slab, four students tabulated their observations as given below: [2]

	S. No.	Angle of incidence	Angle of refraction	Angle of emergence		S. No.	Angle of incidence	Angle of refraction	Angle of emergence
A	1	30	18	32	B	1	30	15	38
	2	45	28	43		2	45	20	53
	3	60	35	60		3	60	28	67
C	1	30	10	31	D	1	30	28	28
	2	45	15	44		2	45	40	40
	3	60	22	60		3	60	56	56

The student most likely to have done the experiment properly is:

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

36. Write chemical equations to represent what happens when [2]

- (a) Ethanol burns in air.
- (b) Ethanol reacts with sodium metal.