

CBSE
Class X Science
Sample Paper – 6
Term II

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. What are the units of refractive index? [1]
2. Find the period and the group of the element, whose atomic number is 12? [1]
3. Which kind of contraceptive methods prevent STDs and how? [1]
4. Draw a ray diagram to show the path of a light ray that enters the glass prism obliquely. Label on it the angle of incidence and the angle of deviation. [2]
5. What is reuse among the 3 R's? Reuse strategy is considered better than the recycling strategy. Why? [2]

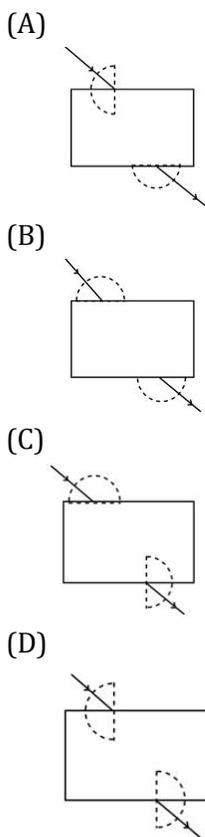
6. Write chemical equations to represent what happens when: [2]
(a) Ethanol burns in air.
(b) Ethanol reacts with sodium metal.
7. Mention the names of various movements that have started to promote the concept of forest conservation. [3]
8. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image formed. [3]
9. [3]
(a) Draw a labelled diagram to show the refraction of light through a glass slab.
(b) Refractive index of diamond is 2.42, what does it mean?
10. Stars seem higher than they actually are. Why? [3]
11. How did Newton show that white light of sun contains seven colours using two prisms? Draw a ray diagram of 'when two prisms are arranged together'. [3]
12. An element has electronic configuration 2, 8, 7. [3]
(a) To which group and period of modern periodic table does it belong?
(b) Is it metallic or non-metallic? Give reason.
(c) Identify the element and what will be its valency?
13. [3]
(a) Write two points of difference in the structures of diamond and graphite.
(b) Explain why, graphite can be used as a lubricant but diamond cannot.
14. The elements of the second period of the periodic table are given below. [3]
Li Be B C N O F Ne
Give reasons to explain why atomic radius decreases from Li to F.
(a) Identify the most metallic and non metallic element.
(b) How does valency change from Li to Ne?
15. What are the probable damages due to ozone layer depletion? [3]
16. [3]
(a) Define variation in relation to a species.
(b) Why is variation beneficial to the species?

17. A black mouse mates with a brown mouse and all the offspring are black. [3]
(a) Why are no brown progeny produced?
(b) If two of the black progeny mate with each other, what kind of offspring would you expect and in what proportions? Give reason for your answer.
18. Briefly explain Darwin's theory of evolution. [3]
19. [5]
(a) What are the advantages of sexual reproduction?
(b) Define the process of ovulation briefly.
20. [5]
(a) Name the type of lens used by watch repair mechanics.
(b) Name the type of lens used to get a virtual and diminished image of an object.
(c) In both the above cases, draw ray diagrams. Also, state the position, nature and size of the image formed in the above cases.
21. [5]
(a) Explain with the help of a diagram, why a pencil partly immersed in water appears to be bent at the water surface.
(b) A pool of water appears to be less deep than it actually is. Why?
22. Four elements A, B, C and D along with their electronic configurations are given below: [5]
A: 2, 1 B: 2, 8 C: 2, 8, 1 D: 2, 8, 8
Answer the following questions based on this information:
i. Which two elements belong to the same period?
ii. Which two elements belong to the same group?
iii. Which two elements belong to the 18th group?
iv. Which element out of A and C is more reactive and why?
v. Which element out of A and B forms the maximum number of compounds?
23. [5]
(a) Sketch a neat diagram showing male reproductive system in human beings and label on it the following:
i. Vas deferens
ii. Prostate glands
iii. Seminal vesicle
iv. Testis
(b) Why are testis situated outside the abdominal cavity?
(c) Write the function of prostate gland and seminal vesicles.

24. [5]
- (a) Sketch a neat diagram of longitudinal section of flower showing fertilization of pollen on stigma and label the following in it:
 (i) Pollen grain (ii) Male germ cell (iii) Female germ cell (iv) Ovary
- (b) Mention any two advantages of cross pollination.

SECTION B

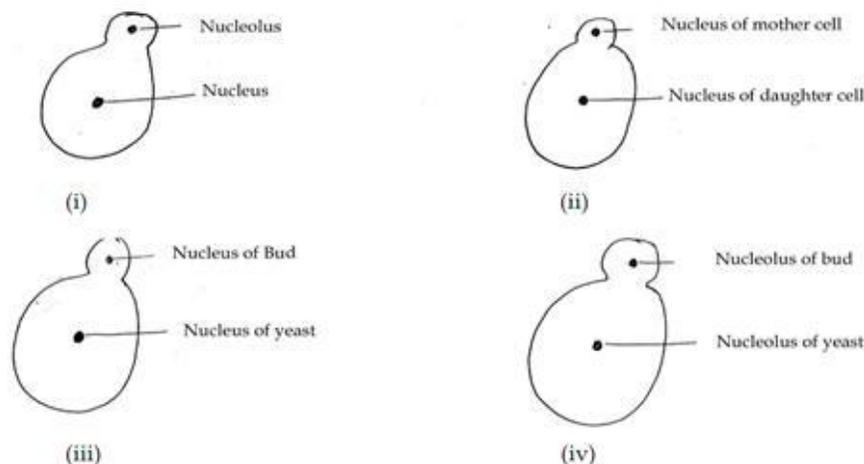
25. Anita obtained a sharp image of a distant window on a white screen by using a convex lens. In order to determine the focal length of the lens, Anita should measure the distance between the: [1]
- (a) Screen and the window only
 (b) Lens and the screen only
 (c) Lens and the window only
 (d) Lens and the screen and also between the tower and the screen.
26. In the glass slab experiment, four students A, B, C and D measured angle of incidence and angle of emergence as shown in the following diagram. The student who measured the angle correctly is: [1]



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

27. For gas welding used for welding broken pieces of iron, we normally use a mixture of [1]
- Ethene and air.
 - Ethane and oxygen.
 - Ethene and oxygen.
 - Ethyne and oxygen.

28. Out of given diagrams, the correctly labelled diagram showing budding in yeast is [1]



- (i)
 - (ii)
 - (iii)
 - (iv)
29. A colourless liquid sample was tested with universal pH paper strip. The colour of the strip is changed to reddish pink. The sample could be [1]
- Sodium hydroxide solution
 - Distilled water
 - Ethanoic acid solution
 - Tap water
30. A slide showing several Amoebae was given to a student and was asked to focus the Amoeba undergoing binary fission. What will the student look for to correctly focus on a dividing Amoeba? [1]
- An Amoeba with many pseudopodia and a small nucleus.
 - A rounded Amoeba with rounded nucleus.
 - An Amoeba covered by a cyst and many nuclei.
 - An Amoeba with elongated nucleus and a constriction in the middle.

31. The correct symbols that indicate the nature of the acetic acid are: [1]

(a)



(b)



(c)



(d)



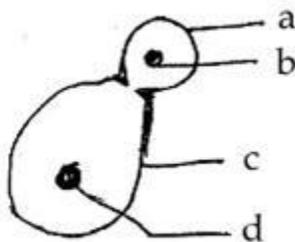
32. In conversion from ethanol to ethene, concentrated sulphuric acid is used as [1]

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

33. Yeast cell in which budding occurs can have [1]

- (a) One bud cell
- (b) Two bud cell
- (c) Three bud cell
- (d) A chain of bud cells

34. A student draws the following diagram of budding in yeast but could not label the parts 'b' and 'd'. The correct labelling of 'b' and 'd' respectively is: [2]



- (a) Nucleus of bud, nucleus of Yeast
 (b) Dividing nucleus of bud, nucleus of Yeast
 (c) Dividing nucleus of Yeast, nucleus of bud
 (d) Nucleus of yeast, nucleus of bud
35. Write chemical equations to show what happens when: [2]
- Ethanol is heated with concentrated sulphuric acid at 443 K.
 - An ester reacts with a base.
36. A student suggested the following 'guidelines' to his friend for doing the experiment on tracing the path of a ray of light passing through a rectangular glass slab for three different angles of incidence:
- Draw the 'outline' of the glass slab at three positions on the drawing sheet
 - Draw 'normals' on the top side of these 'outlines' near their left end.
 - Draw the incident rays on the three 'outlines' in directions making angles of 30° , 45° , 60° with the normals drawn.
 - Fix two pins vertically on each of these incident rays at two points nearly 1 cm apart.
 - Look for the images of the 'heads' of these pins while fixing two pins from the other side, to get the refracted rays.
- When he showed these 'guidelines' to his teacher, the teacher corrected and modified the 'guidelines' labeled as: [2]
- B, C, E
 - B, D, E
 - B, C, D
 - C, D, E