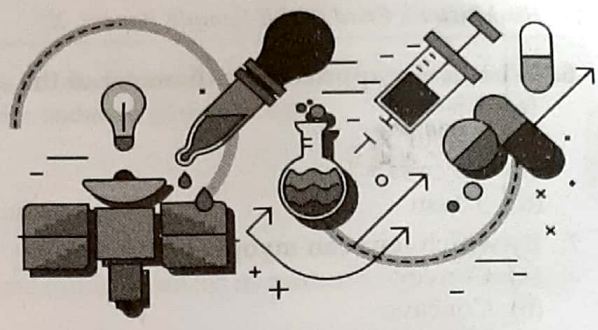
Sample Paper - 9



CLASS X **Moderate Level**

SCIENCE

Maximum Marks: 80

SECTION – A

1. **What is the chemical formula of glucose?**
   (a) $C_6H_{12}O_6$
   (b) $C_6H_{14}O_6$
   (c) $C_6H_{12}O_8$
   (d) $C_8H_{12}O_6$

   OR

   Under which condition does silver chloride decompose?
   (a) Acid hydrolysis
   (b) Extreme heat
   (c) Light
   (d) Both (a) and (b)

2. **Which one of the following precipitates are formed when the carbon dioxide gas is passed through lime water?**
   (a) $Ca(OH)_2$
   (b) $Ca(OH)_4$
   (c) CaCO
   (d) $CaCO_2$

3. **On which river is Bhakra Nangal Dam located?**
   (a) Ganga
   (b) Satluj
   (c) Narmada
   (d) Brahmaputra

4. **Name the physical quantity whose unit is volt/ampere.**
   (a) Power
   (b) Resistance
   (c) Energy
   (d) Charge

   OR

   What is the potential difference across a resistance of 6 ohm, with a current of 5 ampere flowing through it?
   (a) 6 volt
   (b) 11 volt
   (c) 1 volt
   (d) 30 volt

5. **What is the range of wavelength of visible light?**
   (a) 4×10^{-7}m to 8×10^{-7}m
   (b) 4×10^{-6}m to 8×10^{-6}m
   (c) 4×10^{-5}m to 8×10^{-5}m
   (d) 4×10^{-4}m to 8×10^{-4}m

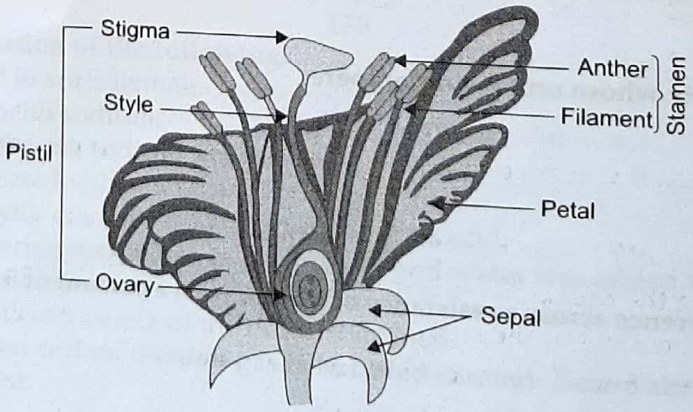
6. **What is the approximate diameter of the eye-ball?**
   (a) 1.5 cm
   (b) 3.5 cm
   (c) 2.3 cm
   (d) 3.3 cm
7. **By which lens can myopia be corrected?**
   (a) Convex
   (b) Concave
   (c) Plano-concave
   (d) Plano-convex
8. **Name the reaction responsible for the large energy production in the sun.**
   (a) Nuclear fusion
   (b) Nuclear fission
   (c) Endothermic reaction
   (d) Both (b) and (c)

   OR

   Which one of the following is used as a fuel in nuclear reactors?
   (a) Rubidium-37
   (b) Uranium-235
   (c) Barium-56
   (d) Xenon-54
9. **Name two man-made ecosystems.**
10. **Write one disadvantage of dams.**

Answer question numbers 11(a) – 11(d) on the basis of your understanding of the following paragraph and the related studied concepts.

The reproductive parts of angiosperms are located in the flower. The different parts of a flower are sepals, petals, stamens and carpels. Stamens and carpels are the reproductive parts of a flower which contain the germ-cells. The flower may be unisexual (papaya, watermelon) when it contains either stamens or carpels or bisexual (Hibiscus, mustard) when it contains both stamens and carpels. Stamen is the male reproductive part and it produces pollen grains that are yellowish in colour. Carpel is present in the centre of a flower and is the female reproductive part. It is made of three parts. The swollen bottom part is the ovary, middle elongated part is the style and the terminal part which may be sticky is the stigma. The ovary contains ovules and each ovule has an egg cell. The male germ-cell produced by pollen grain fuses with the female gamete present in the ovule. This fusion of the germ-cells or fertilization gives us the zygote which is capable of growing into a new plant.



11. **(a) What are the different parts of a flower?**
    (b) Name the reproductive parts of a flower.
    (c) Which is the male reproductive part of a flower?
    (d) Which is the female reproductive part of a flower?

For question numbers 12 and 13, two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes as given below

(a) A is true but R is false.
(b) A is false but R is true.
(c) Both A and R is true and R is correct explanation of the assertion.
(d) Both A and R is true but R is not the correct explanation of the assertion.

12. **Assertion:** A ray of light incident along the normal to the plane mirror retraces its path after reflection from the mirror.

Reason: A ray of light along the normal has angle of incidence as $\frac{\pi}{2}$ and hence, it retraces its own path after reflection from the mirror.

13. **Assertion:** Alternating current can be transmitted over longer distances without much loss.

Reason: Alternating current can be stepped up or stepped down depending on the need.

For question numbers 14, a table is shown. Study the table and answer the four questions that follow (each question carries 1 mark).

Four elements V, W, X, Y and Z along with their electronic configurations are given below:

Elements	V	W	X	Y	Z
Electronic configuration	2,1	2,2	2,3	2,4	2,5

14. **Answer the following question with reference to the above table**
(a) Which one of the above element is a gas?
(b) Which one of the element is the smallest in the above period?
(c) Identify the element X.
(d) Which one of the above element can form a large number of covalent compounds?

SECTION – B

15. **State the laws of reflection.**

OR

Discuss how the brain perceives the image formed on the retina.

16. **Define least count. Give one example. What is the commercial unit of energy?**
17. **What are the three ways to make an electromagnet stronger?**
18. **Write three differences between metals and non-metals.**
19. **Mention the properties of covalent compounds.**
20. **Why do fire flies glow at night?**

OR

You are provided with three test tubes A, B and C which contains distilled water, acidic solution and basic solution respectively. If you are given blue litmus only, how will you identify the contents of each test tube?

21. **What do you mean by the 3R's? State how you can implement the 3R's in practical life.**
22. **Draw a diagram showing the break-down of glucose by various pathways.**
23. **How do Auxin helps in bending of the stem towards light?**
24. **(a) Name some parts of the human female reproductive system.**
(b) Write the full forms of IUCD, AIDS, HIV and OC

OR

(a) Define genetics.
(b) Who is regarded as the "Father of genetics"? Name that plant on which he performed his experiment.
(c) Why did he select the specific plant for his experiment?

SECTION – C

25. (a) Most of the metals acquire a dull surface when exposed to air. Name the chemical phenomena responsible for this process.
    (b) State the conditions under which iron particles rust. Design the activity to investigate the conditions necessary for rusting. Suggest any two methods to prevent rusting of iron.

26. (I) Identify the acids and the base whose combination forms the common salts that you use in your food. Write its formula and chemical name of this salt. Name the source from where it is obtained.
    (II) What is rock salt? Mention its colour and the reason due to which it has this colour.
    (III) What happens when electricity is passed through brine? Write the chemical equation for.

    OR

    (a) How will you bring about following reaction? Write the concerned chemical equations
        (I) Ethanol to ethane
        (II) Ethanol to ethanoic acid
    (b) Give one example with chemical equation for the following reaction:
        (I) Substitution reaction
        (II) Saponification reaction
        (III) Combustion reaction

27. (a) State two advantages of transpiration to the plant body.
    (b) (I) List in tabular form, two ways in which 'transpiration' is different from 'translocation'
        (II) Why do plants have a slow transport system?

    OR

    (a) Name two hormones secreted by pancreas. Write one function of each hormone.
    (b) How does our body respond to adrenaline secreted into the blood?
    (c) Site an example to explain feedback mechanism for regulation of hormonal secretion.

28. (I) Why are two letters (such as TT ,Tt, Tt) used to denote the character of height?
    (II) If a purple pea plant (PP) is crossed with a white coloured pea plant (pp), will we have a white flowered pea plant in F_1 generation? why?
    (III) Define dominant and recessive traits.
    (IV) Give an example of body characteristics used to determine how close two species are in terms of evolution and explain it.
    (V) Explain Variation.

29. Draw ray a diagram for the image formed by a convex lens when the object is placed:
    (i) Beyond center of curvature
    (ii) At center of curvature

30. What is meant by electric current? Name and define its S.I unit. In a conductor, electrons are flowing from B to A. What is the direction of the conventional current? Give justification for your answer.

    A steady current of 1 Ampere flows through a conductor. Calculate the number of electrons that flow through any 5 sections of conductor in 1 second (charge of a electron = 1.6×10^{-19})

    OR

    (I) What is a solenoid?
    (II) Compare the magnetic field of solenoid to that of a bar magnet.
    (III) Explain an activity to show that a current carrying conductor experiences a force when placed in a magnetic field.