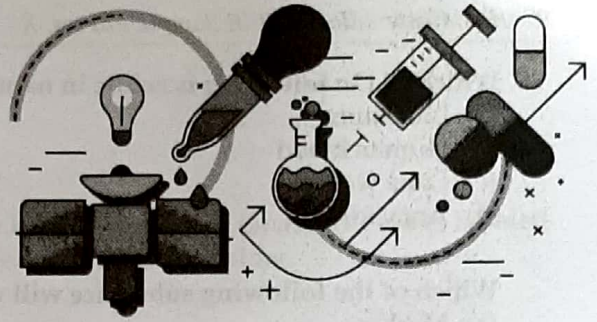


Sample Paper - 8



CLASS X
SCIENCE

Moderate Level

Maximum Marks: 80

SECTION - A

1. Power of the lens is $-50D$, its focal length is _____.
- (a) 5m
 - (b) $-40m$
 - (c) $-0.02m$
 - (d) $-25m$

OR

The radius of curvature of a mirror is $20cm$ the focal length is _____.

- (a) 30cm
 - (b) 10cm
 - (c) 40cm
 - (d) 2cm
2. A person cannot see distinctly objects kept beyond 2m. This defect can be corrected by a lens of power _____.
- (a) $+0.5D$
 - (b) $-0.5D$
 - (c) $+0.2D$
 - (d) $-0.2D$
3. A current of $1A$ is drawn by a filament of an electric bulb. Number of electrons passing through a cross section of the filament in 16 seconds would be roughly _____.
- (a) 10^{20}
 - (b) 10^{16}
 - (c) 10^{18}
 - (d) 10^{23}

OR

The range of resistivity of an insulator is?

- (a) 10^{12} to 10^{17}
 - (b) 10^{10} to 10^{17}
 - (c) 10^{12} to 10^{15}
 - (d) 10^2 to 10^7
4. At the time of a short circuit, the current in the circuit _____.
- (a) Reduces substantially
 - (b) Does not change
 - (c) Increases heavily
 - (d) Vary continuously
5. The fuel used in thermal power plant is _____.
- (a) Water
 - (b) Uranium
 - (c) Biomass
 - (d) Fossil fuel
6. Which of the following is not a physical change?
- (a) Boiling of water to give water vapour
 - (b) Melting of ice to give water
 - (c) Dissolution of salt in water
 - (d) Combustion of liquefied petroleum gas

7. Which of the following is acidic in nature?

- (a) Lime juice
- (b) Human blood
- (c) Lime water
- (d) Antacids

OR

Which of the following substance will not give carbon dioxide on treatment with dilute acid?

- (a) Marble
- (b) Limestone
- (c) Baking soda
- (d) Lime

8. Which of the following is an exhaustible natural resource?

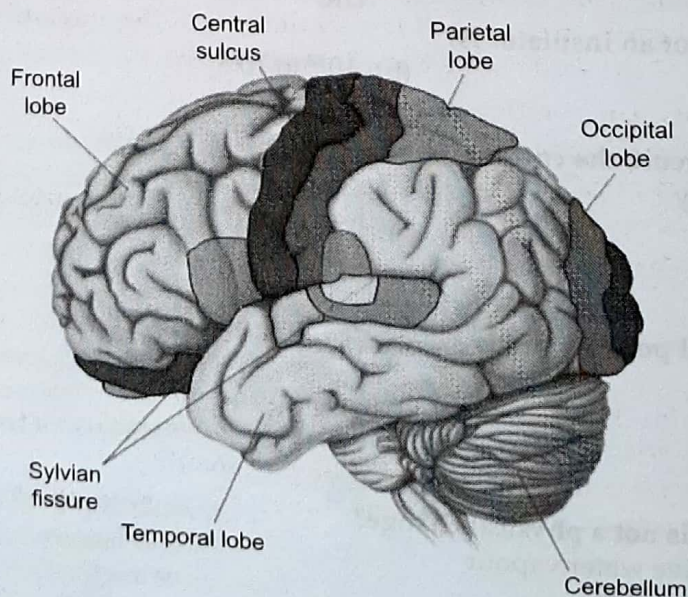
- (a) Air
- (b) Water
- (c) Coal
- (d) Mango tree

9. What is an environment?

10. Why do we need to manage natural resources?

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

The human brain is the central organ of the human nervous system, and with the spinal cord makes up the central nervous system. The brain consists of the cerebrum, the brainstem and the cerebellum. It controls most of the activities of the body, processing, integrating, and coordinating the information it receives from the sense organs, and making decisions as to the instructions sent to the rest of the body. The brain is contained in, and protected by, the skull bones of the head. The cerebrum is the largest part of the human brain. It is divided into two cerebral hemispheres. The cerebral cortex is an outer layer of grey matter, covering the core of white matter. The cortex is split into the neocortex and the much smaller allocortex. The neocortex is made up of six neuronal layers, while the allocortex has three or four. Each hemisphere is conventionally divided into four lobes – the frontal, temporal, parietal, and occipital lobes. The frontal lobe is associated with executive functions including self-control, planning, reasoning, and abstract thought, while the occipital lobe is dedicated to vision. The brain is protected by the skull, suspended in cerebrospinal fluid, and isolated from the bloodstream by the blood-brain barrier. However, the brain is still susceptible to damage, disease, and infection. Damage can be caused by trauma, or a loss of blood supply known as a stroke. The brain is susceptible to degenerative disorders, such as Parkinson's disease, dementias including Alzheimer's disease, and multiple sclerosis. Psychiatric conditions including schizophrenia and clinical depression, are thought to be associated with brain dysfunctions. The brain can also be the site of tumours, both benign and malignant; these mostly originate from other sites in the body. The study of the anatomy of the brain is neuroanatomy, while the study of its function is neuroscience.



11. (a) Which is the central part of the nervous system?
 (b) What are the functions of the brain?
 (c) What is the largest part of the human brain?
 (d) What is the branch which studies the anatomy of brain?

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:** the image formed by a concave mirror is certainly real if the object is virtual.
Reason: the image formed by a concave mirror is certainly virtual if the object is real.
13. **Assertion:** Light from a distant object arriving at the eye lens may get converged at a point in front of the retina
Reason: The eye is producing too much divergence in the incident beam.

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

The table given below shows the periodic table classification with four elements.

Group 1	Group 16	Group 17
	A	X
Z	B	Y

14. Answer the following question with reference to the above table
- (a) What are the group 16 elements called?
 (b) What is the name of the element Z?
 (c) Compare the atomic radius of elements B and Y?
 (d) Which type of ion will be formed by element X?

SECTION – B

15. What are rods and cones? State the structure of the iris and its function in human eye.

OR

The image of a candle flame placed at distance of 45 cm from a spherical lens is formed on a screen placed at a distance of 90 cm from the lens. Identify the type of the lens and calculate its focal length. If the height of the flame is 2 cm, find the height of the image.

16. List three differences between a voltmeter and an ammeter.
17. (i) Name a source of alternating current and a source of direct current.
 (ii) Mention the frequency of AC supply in India.
 (iii) State two important advantages of alternating current over direct current
18. Complete the following chemical reactions –
- (a) $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow$
 (b) $\text{Ca} + \text{H}_2\text{O} \rightarrow$
 (c) $\text{K} + \text{H}_2\text{O} \rightarrow$
19. What are the conditions for the formation of a covalent compound?
20. (i) Write the name given to bases that are highly soluble in water. Give an example.
 (ii) How is tooth decay related to pH? How can it be prevented?
 (iii) Why does bee sting cause pain and irritation? Rubbing of baking soda on the sting area gives relief. How?

OR

- (i) What are the four information given by an equation?
 (ii) State the law of conservation of mass as applicable in a chemical reaction.
21. What changes can you make in your habit to become more environment friendly.
 22. (i) Name the extremely coiled structure of alimentary canal.
 (ii) Compare the length of small intestine in herbivores and carnivores.
 23. What is asexual reproduction? Write the process of budding in hydra?
 24. The progeny of green-stemmed tomato plants is denoted by GG and that of purple-stemmed tomato plants as gg. When these two plants are crossed:
 (i) What colour of stem do you expect in their F_1 progeny?
 (ii) Give the percentage of purple-stemmed plant if F_1 plants are self pollinated.
 (iii) In what ratio would you find the green and purple colour in the F_1 progeny?

OR

Illustrate using a diagram the effect of auxin in different parts of a plant.

SECTION - C

25. What is meant by the power of a lens? What is its S.I unit? Name the type of lens whose power is positive.
 The image of an object formed by a lens is real, inverted and of the same size as the object. If the image is at a distance of 40 cm from the lens? Draw the ray diagram to justify your answer.
26. (a) What is meant by potential difference? State its S.I unit.
 (b) Name the device that helps to maintain a potential difference across a conductor.
 (c) Calculate: 1) the highest 2) the lowest resistance that can be obtained by the combination of four coils of resistance 4Ω , 8Ω , 12Ω and 24Ω

OR

Explain the term 'electro magnetic' and 'induction' in terms of electromagnetic induction. List three factors on which the value of induced current in the circuit produced depends. Name and state the rule to determine the direction of induced current. State one practical application of this phenomenon in day to day life.

27. (a) Acid as well as bases ionize in water. Name the ions produced by each in water.
 (b) If we have hydrochloric acid and acetic acid of equal concentration, which will be stronger acid and why?
 (c) How will the concentration of hydrogen ions gets affected if an acid is diluted?

OR

Write the balance equation of the following.

- (a) Methane is burned in sufficient air.
 (b) Ethanol is treated with sodium.
 (c) Ethanoic acid reacts with sodium hydroxide.
 (d) Ethanoic acid is treated with sodium carbonate.
 (e) Ethanol is mixed with ethanoic acid in presence of an acid.
28. (i) Solid Calcium chloride was taken in a container and water was added to it slowly:
 (a) Write the observation.
 (b) Write the chemical formula of the product formed.
 (ii) What happens when carbon dioxide gas is bubbled through lime water
 (a) In small amount.
 (b) In excess?
 (iii) Why do you apply paint on iron particles?
29. (a) Mention the program and site of photosynthesis in green plants. (b) What are the raw materials essential for this process? (c) How are they obtained? (d) Write complete balanced equation for this process. (e) Name the byproducts.

OR

- (a) Define reflex action. State its significance
 (b) How do plant responds to external stimuli.
30. How to encourage survival by producing variations in a species?