

Class 10th Science Sample Paper 2 Full Syllabus 2026

Time Allowed: 3 hours

Maximum Marks : 80

General Instructions:

1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

Section A

Question 1 – 9 (1 marks), Question 10 – 12 (2 marks), Question 13 – 14 (3 marks), Question 15 (4 marks), Question 16 (5 marks)

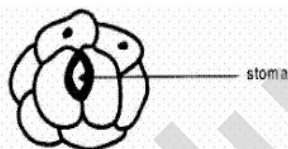
1. Which of the following plants reproduce through spores?

- a) Amoeba b) Hydra c) Penicillin d) Rose

2. A cross made between two pea plants produces 50% tall and 50% short pea plants. The gene combination of the parental pea plants must be

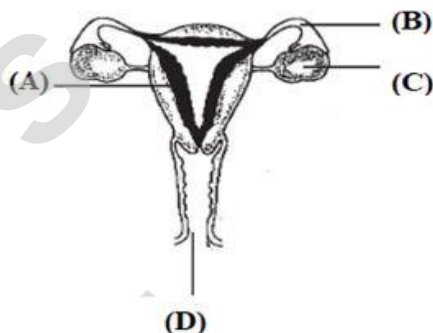
- a) Tt and Tt b) TT and Tt c) Tt and tt d) TT and tt

3. A student had drawn the diagram of stomata as shown below in a hurry. He could not be given full marks as he



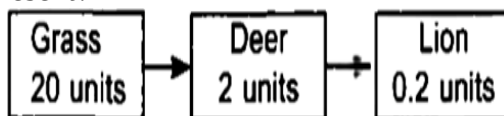
- a) should have drawn nuclei and chloroplasts in guard cells and nuclei in all epidermal cells
 b) forgot to draw nuclei in guard cells and also to label the diagram
 c) did not draw nuclei, in guard cells and other cells
 d) did not label the stoma in its correct position

4. Which part of the following produce egg?



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

5. What does the given flow chart represent?



- a) Both Unidirectional energy flow and Lindeman's law b) Lindeman's law
 c) Unidirectional energy flow d) Biomagnification

6. Which among the following statements are true for sexual reproduction in flowering plants?

- i. It requires two types of gametes iii. It always results in formation of zygote
 ii. Fertilization is a compulsory event iv. Offspring formed are clones
 a) (i), (iv) and (iii) b) (i) and (iv) c) (i), (ii) and (iii) d) (i), (ii) and (iv)

7. Spinal cord originates from:

- a) cerebellum b) pons c) medulla d) cerebrum

8. Assertion (A): In humans, male (or father) is responsible for sex of the baby which is born.

Reason (R): Y chromosomes are present in only male gametes or sperms.

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

9. Assertion (A) : Adrenaline is called the emergency hormone.

Reason (R) : It prepares the body to fight away the emergency situation.

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

10. (i) State one important function of ozone layer at the higher level in the atmosphere.

(ii) How is ozone formed?

(iii) It has been observed that ozone layer is getting depleted. Name the compound responsible for ozone depletion.

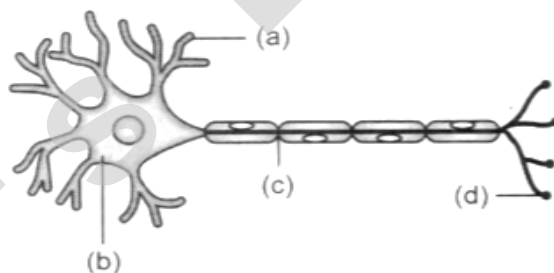
11. Mention the ecologically amplified elements that lead to the decline in population of predator birds.

OR

Plants → Deer → Lion

In the given food chain, what will be the impact of removing all the organisms of second trophic level on the first and third trophic level? Will the impact be the same for the organisms of the third trophic level in the above food chain if they were present in a food web? Justify.

12. Study the figure given above and answer the following:



- a. What does the figure represent?
b. Name the parts a, b, c and d in the diagram given above?

13. In flowering plants, the pollen grains are transferred to stigma by pollination but the female germ cells are present in the ovary. Explain with the help of a labelled diagram (only concerned parts), how the male germ cell reaches the ovary.

14. Leaves of healthy potted plant were coated with vaseline. Will this plant remain healthy for long? Give reasons for your answer.

15. Read the following text carefully and answer the questions that follow:

Nutrition is the process of taking food by an organism and the utilization of food for energy. This is a vital process that helps living beings obtain their energy from various sources.

Nutrients are substances that provide nutrition.

The mode of nutrition varies from one species to another. Plants do photosynthesis to prepare their own food. Animals depend on plants for food.



- a) What do you understand by nutrition? (1)
 b) Mention how organisms like bread moulds and mushrooms obtain their food. (1)
 c) What do you understand by autotrophic nutrition? (2)
 OR
 What is common for Cuscuta, ticks, and leeches? (2)

16. Mendel crossed a pure tall pea plant (TT) with a pure short pea plant (tt) and obtained all tall plants in F₁ generation.

- a) What is the gene combination present in the plants of F₁ generation?
 b) Give reason why only tall plants are observed in F₁ progeny.
 c) What will be the ratio of the plants obtained in the F₂ generation when F₁ plants are self - pollinated?
 OR
 Give the various functions performed by the plant hormones.

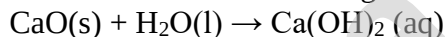
Section B

Question 17 – 24 (1 marks), Question 25 (2 marks), Question 26 – 27 (3 marks), Question 28 (4 marks), Question 29 (5 marks)

17. Which one of the following statements is not correct?

- a) Some of the metals react with acids to give salt and hydrogen gas.
 b) Generally, all metal carbonates react with acids to give salt, water and carbon dioxide.
 c) All metal oxides react with water to give salt and hydrogen gas.
 d) Some non - metal oxides react with water to form acids.

18. Calcium oxide reacts vigorously with water to produce slaked lime.



This reaction can be classified as :

- A. Combination reaction B. Exothermic reaction C. Endothermic reaction D. Oxidation reaction

Which of the following is the correct option?

- a) C and D b) A, C and D c) A and C d) A and B

19. Drinking alcohol and driving may cause serious accidents. To discourage this, police randomly test drivers for alcohol using a breath analyzer. The breath analyzer works because:

- a) Alcohol causes more saliva which the machine checks.
 b) Alcohol makes the breath dry and the machine registers moisture.
 c) Alcohol in the breath causes a chemical change which is registered by the breath analyzer machine.
 d) Alcohol makes the breath hotter which changes the machine reading.

20. Match the following with the correct response:

- a) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)
 b) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)
 c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c)
 d) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)

Column A	Column B
(i) Welding	(a) Ethyl alcohol
(ii) Fuel in a spirit lamp	(b) Ester
(iii) Lime water turns milky	(c) Carbon dioxide
(iv) Fruity smell	(d) Ethyne and oxygen

21. Although metals form basic oxides, which of the following metals form an amphoteric oxide?

- a) Ca b) Na c) Cu d) Al

22. Which of the following is the correct representation of the electron dot structure of nitrogen?

- a) $\cdot \ddot{N} :: \ddot{N} \cdot$ b) $\cdot N :: N \cdot$ c) $\cdot \ddot{N} : \ddot{N} \cdot$ d) $\cdot \ddot{N} : \ddot{N} :$

23. The oxide which can react with HCl as well as KOH to give corresponding salt and water is

- a) K₂O b) Na₂O c) CuO d) Al₂O₃

24. Assertion (A): In the reaction, $Zn_{(s)} + 2H^+_{(aq)} \rightarrow Zn^{2+}_{(aq)} + H_{2(g)}$, zinc acts as an oxidising agent and H⁺ acts as a reducing agent.

Reason (R): An oxidising agent accepts electrons while a reducing agent loses electrons.

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

25. Identify the acid and base which form sodium hydrogen carbonate. Write chemical equation in support of your answer. State whether this compound is acidic, basic or neutral. Also write its pH value.

26. (i) A compound with molecular formula C₃ H₆ O has two isomers.

- a. Draw the structures of both the isomers.
b. Write their functional group.

(ii) Why are the compounds of carbon exceptionally stable?

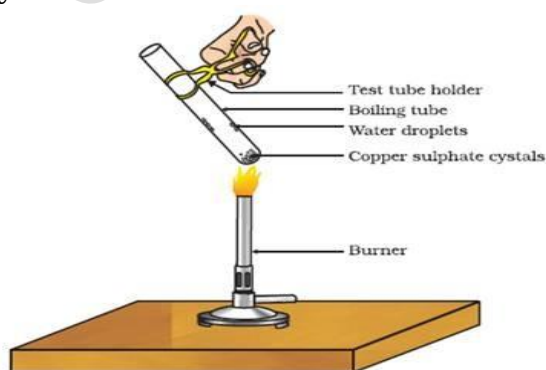
OR

- a. Draw the electron dot structure for ethyne.
b. List two differences between the properties exhibited by covalent compounds and ionic compounds.

27. Hydrogen is not a metal but it has been assigned a place in the reactivity series of metals. Explain.

28. Read the following text carefully and answer the questions that follow:

Copper sulphate crystal contains water of crystallisation when the crystal is heated the water is removed and salt turns white. The crystal can be moistened again with water. The water of crystallisation is the fixed number of water molecules present in 1 formula unit of copper sulphate. On heating gypsum at 373K, it loses water molecules and became calcium sulphate hemihydrate.



- a. If the crystal is moistened with water, then which colour of the crystal reappears?
b. What is the commercial name of calcium sulphate hemihydrate?
c. How many water molecules are present in one formula unit of copper sulphate?

OR

What is obtained when gypsum is heated at 373K?

29. A cloth strip dipped in onion juice is used for testing a liquid X. The liquid X changes its odour. Which type of an indicator is onion juice? The liquid X turns blue litmus red. List the observations the liquid X will show on reacting with the following:

- Zinc granules
- Solid sodium carbonate

Write the chemical equations for the reactions involved.

OR

- Write balanced chemical equation for the following word equation.
Lead nitrate + Potassium iodide $\rightarrow$ Lead iodide + Potassium nitrate
Is this a double displacement reaction? Justify your answer. Name the compound precipitated and write the ions present in it.
- Write the method of preparation of $\text{Ca}(\text{OH})_2$. What happens when CO_2 is passed through it? Write balanced chemical equation for the reaction involved.

Section C

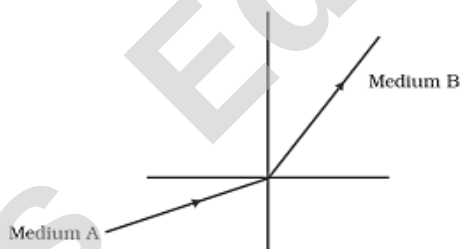
Question 30 – 32 (1 marks), Question 33 – 34 (2 marks), Question 35 – 37 (3 marks), Question 38 (4 marks), Question 39 (5 marks)

30. Which of the following is incorrect about the heat produced in a resistor?

- It is directly proportional to the square of the current.
- Directly proportional to the resistance for a given current.
- Directly proportional to the time for which the current flows through the resistors.

- a) (A) b) None of these c) (C) d) (B)

31. A light ray enters from medium A to medium B as shown in Figure. The refractive index of medium B relative to A will be



- a) less than unity b) zero c) greater than unity d) equal to unity

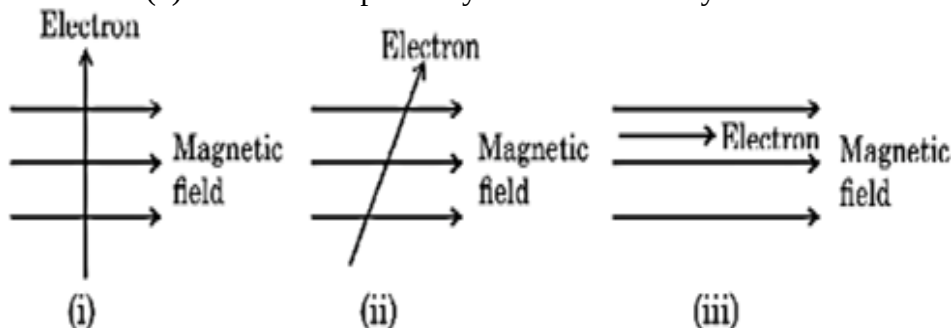
32. Assertion (A): There is no dispersion of light refracted through a rectangular glass slab.

Reason (R): Dispersion of light is the phenomenon of splitting of a beam of white light into its constituents colours.

- Both A and R are true and R is the correct explanation of A.
- Both A and R are true but R is not the correct explanation of A.
- A is true but R is false.
- A is false but R is true.

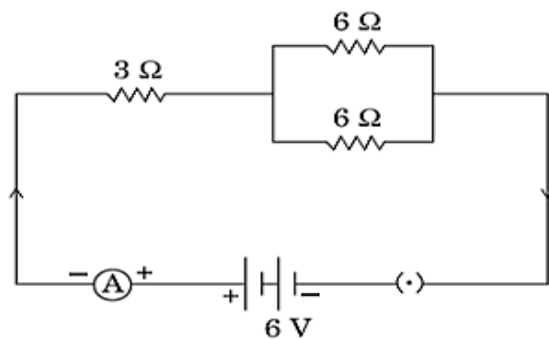
33. 1. State the rule used to find the force acting on a current carrying conductor placed in a magnetic field.

2. Given below are three diagrams showing entry of an electron in a magnetic field. Identify the case in which the force will be (1) maximum and (2) minimum respectively. Give reason for your answer.



34. An electric kettle rated at 220 V, 2.2 kW works for 3h. Calculate the energy consumed and the current drawn.
OR

In the given circuit, find:



- Total resistance of the network of resistors
- Current through ammeter A, and
- Potential difference across 3Ω and 6Ω resistors

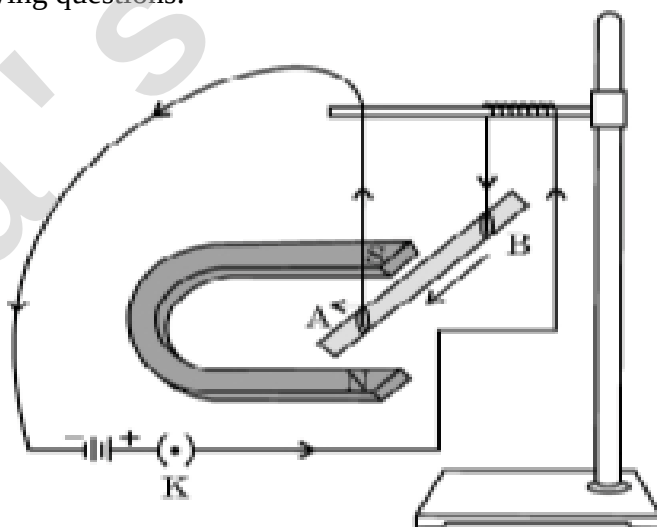
35. The image formed by a spherical mirror is real, inverted and is of magnification - 2. If the image is at a distance of 30 cm from the mirror, where is the object placed? Find the focal length of the mirror. List two characteristics of the image formed if the object is moved 10 cm towards the mirror.

36. A student sitting at the back of the classroom cannot read clearly the letters written on the backboard. What advice will a doctor give to her?

37. Differentiate between virtual image formed by a concave mirror and of a convex mirror.

38. Read the following text carefully and answer the questions that follow:

A student was asked to perform an experiment to study the force on a current carrying conductor in a magnetic field. He took a small aluminum rod AB, a strong horse shoe magnet, some connecting wires, a battery and a switch and connected them as shown. He observed that on passing current, the rod gets displaced. On reversing the direction of current, the direction of displacement also gets reversed. On the basis of your understanding of this phenomenon, answer the following questions:

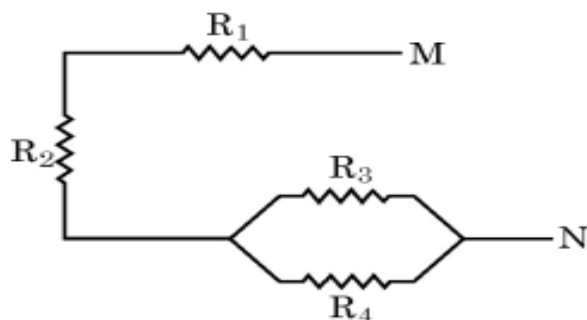


- (a) In the above experimented set up, when current is passed through the rod, it gets displaced towards the left. What will happen to the displacement if the polarity of the magnet and the direction of current both are reversed?
(b) Name any two devices that use current carrying conductors and magnetic field. (1)
- Why does the rod get displaced on passing a current through it? (1)
- State the rule that determines the direction of the force on the conductor AB. (2)

OR

Draw the pattern of magnetic field lines produced around a current carrying straight conductor held vertically on a horizontal cardboard. Indicate the direction of the field lines as well as the direction of current flowing through the conductor. (2)

39. 1. For the combination of resistors shown in the following figure, find the equivalent resistance between M & N.



2. State Joule's law of heating.
3. Why we need a 5 A fuse for an electric iron which consumes 1 kW power at 220 V?
4. Why is it impracticable to connect an electric bulb and an electric heater in series?

OR

There are three resistors of 10Ω , 20Ω and 30Ω joined in parallel in a circuit. The potential difference across the electric circuit is 10 V.

- a. Draw a circuit diagram for the above case.
 - b. Find the total resistance of the combination of resistors.
 - c. Calculate the electric current drawn from the same source.
-