Class 10th Science Sample Paper 1 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. In the slide of an epidermal peel, the parts which appear pink coloured after staining with safranin are
a) cell membrane and cytoplasm b) all parts in the peel c) stomata only d) nuclei only

2. Father of Human genetics is
a) H.G Khurana b) Charles Darwin c) Sir Archibald Garrod d) Gregor Mendel

3. An ecosystem includes
a) sometimes living organisms and sometimes non - living objects b) non - living objects
c) both living organisms and non - living objects d) all living organisms

4. Match the following with correct response.

Column A	Column B
(i)Thyroid gland	(a)Testosterone
(ii)Pancreas	(b)Thyroxin
(iii)Testis	(c)Estrogen
(iv)Ovaries	(d)Insulin and glucagon

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

5. United Nations Environment Programme forged an agreement to
a) control water pollution b) reduce CFC production
c) control CO_2 emissions in the environment d) conserve biodiversity

6. Consider the following statements about small intestine and select the one which is NOT correct:
a) The small intestine receives secretions from liver and pancreas.
b) The small intestine is the site of complete digestion of food.
c) The villi of the small intestine absorb water from the unabsorbed food before it gets removed from the body via the anus.
d) The length of the small intestine in animals differs as it depends on the type of food they eat.

7. The movement of sunflower in accordance with the path of sun is due to
a) hydrotropism b) phototropism c) geotropism d) chemotropism

8. Assertion (A): Asexual reproduction is also called blastogenesis.
Reason (R): In asexual reproduction, there is no formation and fusion of gametes.
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): Recycling is the way of managing plastic waste.
Reason (R): Broken plastic articles are sent to plastic processing units where they are melted and remoulded to make new plastic articles.
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. A student observed a permanent slide showing asexual reproduction in Hydra. Draw labelled diagram in proper sequence of the observations that must have been made by the student. Name the process of reproduction also.

11. Which food chains are advantageous in terms of energy?
OR
What is the role of decomposers in the ecosystem?

12. Write a short note on Thymus gland.

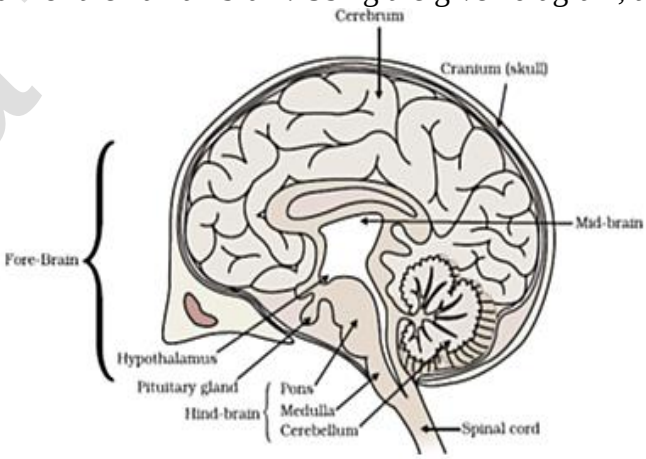
13. Outline a project which aims to find the dominant coat colour in dogs.

14. "If there were no algae there would be no fish in the sea." Comment.

15. Read the following text carefully and answer the questions that follow:
Mendel worked out the rules of heredity by working on garden pea using a number of visible contrasting characters. He conducted several experiments by making a cross with one or two pairs of contrasting characters of pea plant. On the basis of his observations he gave some interpretations which helped to study the mechanism of inheritance.

a) When Mendel crossed pea plants with pure tall and pure short characteristics to produce F_1 progeny, which two observations were made by him in F_1 plants? (1)
b) Write one difference between dominant and recessive trait. (1)
c) In a cross with two pairs of contrasting characters
RRYY┬(Round Yellow)) × rryy┬(Wrinkled Green))
Mendel observed 4 types of combinations in F_2 generation. By which method did he obtain F_2 generation? Write the ratio of the parental combinations obtained and what conclusions were drawn from this experiment. (2)
OR
Justify the statement:
"It is possible that a trait is inherited but may not be expressed." (2)

16. What is placenta? Mention its role during pregnancy?
OR
Given below is a labelled diagram of the human brain. Using the given diagram, answer the following questions:



a) Which part of the brain controls reflex movements of the head, neck, and trunk?
b) Name the part of the human brain which contains a vital centre for controlling blood pressure.
c) Which part of the hindbrain regulates respiration?
d) How is the brain protected from injuries and shock?
e) Which part of the human brain is the main thinking region?

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. When a small amount of acid is added to water, the phenomena which occur are :

1. Dilution 2. Neutralisation 3. Formation of H_3O^+ ions 4. Salt formation

The correct statements are:

a) (3) and (4) b) (1) and (3) c) (2) and (4) d) (1) and (2)

18. Which of the given statement is true or false:

Statement A: Valeric acid is the common name of hexane.

Statement B: Glycerol is added in the manufacturing of soap.

a) Statement B is true and statement A is false b) Neither statement A nor statement B is false

c) Both the statements A and B are false d) Statement A is true and statement B is false

19. An element X reacts with O_2 to give a compound with a high melting point. This compound is also soluble in water. The element X is likely to be:

a) silicon b) carbon c) iron d) calcium

20. Match the following with the correct response:

Column A	Column B
(i) Alcohol	(a) - X
(ii) Aldehyde	(b) - CHO
(iii) Ketone	(c) - OH
(iv) Haloalkane	(d) - CO -

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

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

21. A student adds one big iron nail each in four test tubes containing solution of zinc sulphate, aluminium sulphate, copper sulphate and iron sulphate. A reddish brown coating was observed only on the surface of iron nail which was added in the solution of **:**

22. The name and formula of third member of homologous series of alkyne is:

a) ButyneC_4H_8 b) PropyneC_3H_6 c) ButyneC_4H_6 d) PropyneC_3H_4

23. The chemical formula of baking soda is:

a) $Na_2\ CO_3$ b) $NaHCO_3$ c) $MgSO_4$ d) $MgCO_3$

24. Assertion (A): Copper vessels get covered with green coating in rainy season.

Reason (R): It is because of the formation of copper carbonate.

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. Salt X commonly used in bakery products on heating gets converted into another salt Y which itself is used for removal of hardness of water and a gas Z is evolved. The gas C when passed through lime water, turns it milky. Identify X, Y and Z.

26. State one characteristic each of the chemical reaction which takes place when:

i. Dilute hydrochloric acid is added to sodium carbonate.

ii. Lemon juice is added gradually to potassium permanganate solution.

iii. Dilute sulphuric acid is added to the barium chloride solution.
iv. Quick lime is treated with water.
v. Wax is burned in the form of a candle.

OR

A metal salt MX when exposed to light, split up to form metal M and a gas X_2 . Metal M is used in making ornaments whereas gas X_2 is used in making bleaching powder. The salt MX is itself used in black and white photography.

i. Identify metal M and gas X_2 .
ii. Mention the type of chemical reaction involved when salt MX is exposed to light.

27. Draw the electron - dot structures of the following compounds and state the type of bonding in each case:
(i) KCl (ii) NH_3 (iii) CaO (iv) N_2 (v) $CaCl_2$

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

In a redox reaction, both oxidation, as well as reduction,takes place together, oxidation involves loss of electrons while reduction involves the gain of electrons. The redox - reaction may involve a combination of atoms and molecules, displacement of metals, or non - metals.

Example:$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$
displacement of Cu metal from its compound.

i. In the below equation, which gets reduced? (1)
$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$
ii. The oxidising agent generally loses or gains an electron. (1)
iii. Identify the oxidising agent and reducing agent in the above reaction. (2)
$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$

OR

Identify the type of given reaction.(2)
$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$

29. A neutral organic compound **X** (Molecular formula $C_2 H_6 O$) on reacting with acidified $K_2 Cr_2 O_7$ gives an organic compound **Y** which is acidic in nature. **X** reacts with **Y** on warming in the presence of conc. $H_2 SO_4$ to give a sweet smelling compound **Z** .

i. Identify **X** , **Y** and **Z** .
ii. Write the chemical equations for the reactions in the conversion of (1) **X** to **Y** and (2) **X** to **Z** .
iii. State the role of (1) acidified $K_2 Cr_2 O_7$ in the conversion of **X** to **Y** and (2) conc. $H_2 SO_4$ in the reaction of **X** and **Y** .
iv. Name the reaction which occurs when **Z** reacts with an alkali.

OR

i. State any two reasons for carbon forming a large number of compounds. Why does carbon form compounds
   a. mainly by covalent bonding?
   b. having low melting and boiling points?
ii. With the help of balanced chemical equations, explain what happens when
   a. a piece of sodium is added to ethanol?
   b. ethanol burns in the presence of oxygen?

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)

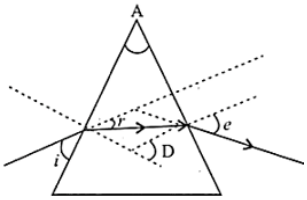
30. Find the incorrect statement:

A. Convex mirrors are used by the dentist to see the large images of teeth of patients.
B. Convex mirrors are used as rear - view mirrors in cars, motorcycles, scooters,etc
C. Concave mirrors are used for shaving purpose.

D. Concave mirrors are used by doctors to focus light inside the ear or inside the mouth for medical examination.

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

31. In the following diagram the correctly marked angles are:



a) ∠ A, ∠ r and ∠ D b) ∠ i, ∠ A and ∠ D c) ∠ A, ∠ i and ∠ e d) ∠ A and ∠ e

32. Assertion (A): There is no change in the energy of a charged particle moving in a magnetic field although a magnetic force is acting on it.
Reason (R): Work done by the centripetal force is always zero.
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.

33. A student cannot see clearly a chart hanging on a wall placed at a distance 3 m from his eye.
(i) Name the defect of vision he is suffering from. (ii) Draw a ray diagram to illustrate this defect. List its two possible causes.

34. A wire has a resistance of 5Ω . Calculate the resistance of a wire of same material, whose length is three times and area of cross - section is four times the first wire.

OR

A heater coil is rated 100 W, 200 V. It is cut into two identical parts. Both parts are connected together in parallel to the same source of 200 V. Calculate the energy liberated per second in the new combination.

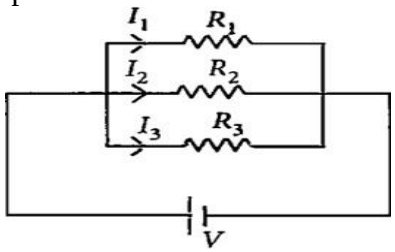
35. (a) A straight cylindrical conductor is suspended with its axis perpendicular to the magnetic field of a horse - shoe magnet. The conductor gets displaced towards left when a current is passed through it. What will happen to the displacement of the conductor if the

a. current through it is increased?
b. horse - shoe magnet is replaced by another stronger horse - shoe magnet?
c. direction of current through it is reversed?

(b) Name and state rule for determining the direction of force on a current carrying conductor in a magnetic field.

36. A camera in many ways is similar to the human eye, still, there are some basic differences in image formation between the two. Explain.
(i) Draw the pattern of magnetic field lines produced by a current carrying circular loop showing the direction of current in the loop and the direction of the magnetic field lines.
(ii) State the rule which can be applied to know the direction of magnetic field lines in the above case.

37. Read the following text carefully and answer the questions that follow:
If two or more resistances are connected in such a way that the same potential difference gets applied to each of them, then they are said to be connected in parallel.

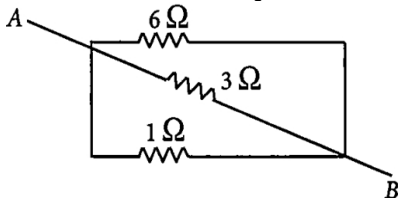


The current flowing through the two resistances in parallel is, however, not the same. When we have two or more resistances joined in parallel to one another, then the same current gets additional paths to flow and the overall resistance decreases.

i. Three resistances, 2Ω , 6 Ω and 8 Ω are connected in parallel, then what will be the equivalent resistance? (1)

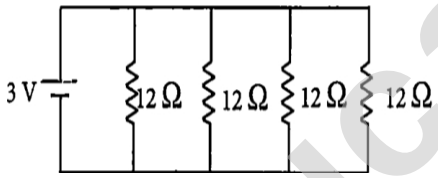
ii. A wire of resistance 12Ω is cut into three equal pieces and then twisted their ends together, then what will be theequivalent resistance? (1)

iii. Three resistances are connected as shown. Calculate the equivalent resistance between A and B. (2)



OR

Find the current in each resistance. (2)



38.

i. A concave mirror of focal length 10 cm can produce a magnified real as well as virtual image of an object placed in front of it. Draw ray diagrams to justify this statement.

ii. An object is placed perpendicular to the principal axis of a convex mirror of focal length 10 cm. The distance of the object from the pole of the mirror is 10 cm. Find the position of the image formed.

OR

i. Define principal axis of a lens. Draw a ray diagram to show what happens when a ray of light parallel to the principal axis of a concave lens passes through it.

ii. The focal length of a concave lens is 20 cm. At what distance from the lens should a 5 cm tall object be placed so that its image is formed at a distance of 15 cm from the lens? Also calculate the size of the image formed.
