EDUTECH ACADEMY
NURTURING THE FUTURE....

— SCHOOL SECTION —

CBSE CLASS 10 – SCIENCE Qs PAPER 2025_26

Series JMS/5

SET - 1

Code No. **2/4/20**

Roll No. | | | | | | | |

Candidates must write the Code on the title page of the answer-book

General Instructions:

Read the instructions very carefully and strictly follow them :

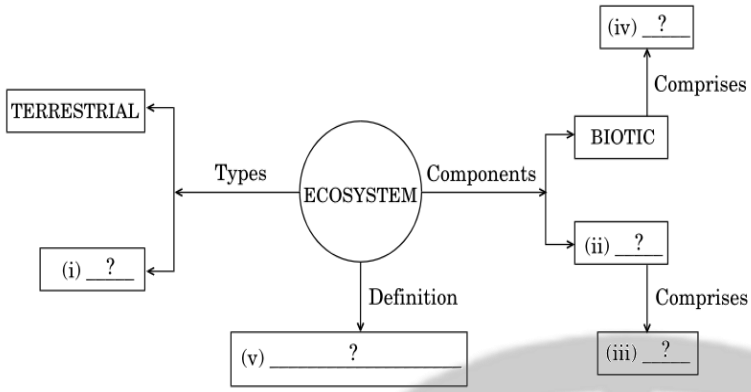
1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

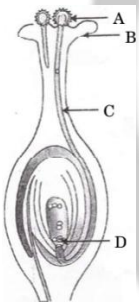
SCIENCE (086)

Time allowed : 3 hours *Maximum Marks : 80*

	Section A	
1	In the experiment, to show CO_2 is given out during respiration. Atul put boil gram seeds in a conical flask. According to his observation, the water level in the bent tube: a) Rise or decreases in water level depends on the room temperature b) Rises c) Decreases d) Remains the same	**[1]**
2	Select the group which shares maximum number of common characters - a) two individuals of a species b) two genera of a family c) two species of a genus d) two genera of two families	**[1]**
3	Identify from the following a group containing all non - biodegradable substances. a) Cotton, Wood, Nylon b) Leather, Glass, Plastic c) Leather, Silk, Wool d) DDT, Polyester, Glass	**[1]**
4	Match the following with correct response. **Column A** / **Column B** (i)Junction between neuron / (a)Thermoreceptors (ii) The largest cell in the human body / (b)Neuron (iii)Sense organs for smell / (c)Synapse (iv)Sense organs for touch / (d)Olfactory receptors a) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b) b) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) c) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d) d) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)	**[1]**
5	What will happen if the deer are missing in the following food chain? Grass → Deer → Tiger	**[1]**

	a) The population of tigers will increase b) The tigers will die c) The amount of grass will decrease d) The tigers will start eating grass	
6	Which of the following statements about the autotrophs is incorrect? a) They store carbohydrates in the form of starch b) They convert CO_2 and water into carbohydrates in the absence of sunlight c) They synthesize carbohydrates from CO_2 and water in the presence of sunlight & chlorophyll d) They constitute the first trophic level in food chains	**[1]**
7	Which hormone deficiency causes dwarfism? a) Oxytocin b) Thyroxin c) Growth hormone d) Vasopressin hormone	**[1]**
8	**Assertion (A):** Testes in human males are located outside the abdominal cavity in scrotum. **Reason (R):** Scrotum provides a lower temperature than the normal body temperature for sperm formation. 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.	**[1]**
9	**Assertion (A):** Garden is an artificialecosystem. **Reason (R):** Biotic and abiotic components of the ecosystem are manipulated by humans. 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.	**[1]**

10	State one genetically different feature between sperms and eggs of humans. What is its consequence?	**[2]**
11	Complete the following flow chart based on ecosystem and its components.  **OR** Explain, how pesticides get accumulated in the environment.	**[2]**
12	Name the main thinking part of the human brain. List any two major functions (other than thinking) of this part.	**[2]**
13	Study the following cross thatshowsthe self - pollination in F_1 , fill in the blank the genotype and phenotype in the F1 generation. What type of cross it is? Parents | RRYY | x | rryy Round, yellow | wrinkled, green F_1 — | Rr Yy | x | ? Round, yellow	**[3]**
14	The digestion of food in human alimentary canal is a complex process. State the enzyme/salt present in the following and mention their function in the process of digestion: 1. Saliva 2. Bile Juice 3. Pancreatic Juice	**[3]**
15	**Read the following text carefully and answer the questions that follow:** The mechanism by which the sex of an individual is determined is called sex - determination. In human beings, sex of a newborn is genetically determined, whereas in some others it is not. There are 46 (23 pairs) chromosomes in human beings. Out of these, 44 (22 pairs) control the body characters and 2 (one pair) are known as sex chromosomes. The sex chromosomes are of two types - X chromosome and Y chromosome. At the time of fertilisation, depending upon	**[4]**

	which type of male gamete fuses with the female gamete, the sex of the newborn child is decided. 1. What is the statistical probability of getting either a male or a female child? Justify your answer. (1) 2. Out of male or female, which of them has a perfect pair of sex chromosomes? In case of a perfect pair, will the gametes produced be of the same kind or of a different kind? (1) 3. Name two animals whose sex is not genetically determined. Explain the process of their sex determination. (2) **OR** With the help of a flowchart only, show how sex is genetically determined in human beings. (2)	
16	1. Explain by giving one example each: a. Unisexual flowers b. Bisexual flowers 2. Name the labelled parts A, B, C and D in the diagram given below.  3. Pollination may occur without fertilisation but fertilisation will not take place without pollination. Give reason to justify this statement. **OR** What are reflex actions? Give two examples. Explain a reflex arc.	**[5]**
	Section B	
17	Which of the following statements is not correct? a) Some metals react with acids to give salt and hydrogen. b) Some non metal oxides react with water to form an acid. c) All metal oxides react with water to give salt and acid. d) All metal carbonates react with acid to give a salt, water and carbon dioxide.	**[1]**

18	Which of the given statement is correct or wrong: **Statement A:** Detergent with less branching in the molecule is degraded more easily than branched - chain detergents. **Statement B:** Soaps are 100% biodegradable. a) Both the statements A and B are true. b) Neither statement Anor statement B is true. c) Statement B is true;Statement A is false. d) Statement A is true;Statement B is false.	**[1]**
19	Among the following, the metal with lowest density is: a) Aluminium b) Magnesium c) Lithium d) Lead	**[1]**
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)	**[1]**
21	Aqueous solutions of zinc sulphate and iron sulphate were taken in test tubes I and II by four students A, B, C and D. Metal pieces of iron and zinc were dropped in the two solutions and observations made after several hours were recorded in the form of table as given below:	**[1]**

Student	Metal	Solution	Colour change of solution	Deposit/Coating obtained
A	Fe	$ZnSO_4$	Turned green	Silvery grey coating
	Zn	$FeSO_4$	No change	No change
B	Fe	$ZnSO_4$	No change	Black deposit
	Zn	$FeSO_4$	Colour faded	Grey coating
C	Fe	$ZnSO_4$	No change	No change
	Zn	$FeSO_4$	Turned colourless	Black deposit
D	Fe	$ZnSO_4$	No change	Grey deposit
	Zn	$FeSO_4$	No change	Black deposit

The correct reporting has been made in observations:

a) Student B

b) Student A

c) Student C

d) Student D

22 Which of these is also a name for Ethanol? **[1]**

a) Formic acid

b) Acetaldehyde

c) Ethyl alcohol

d) Acetone

23 Which one of the following natural sources contains Oxalic acid? **[1]**

a) Tamarind

b) Nettle sting

c) Tomato

d) Ant sting

24 **Assertion (A):** The chemical formula of bleaching powder is $CaOCl_2$. **[1]**

Reason (R): Calcium oxide react with chlorine to form bleaching powder.

a) Both A and R are true and R is the correct explanation of A.

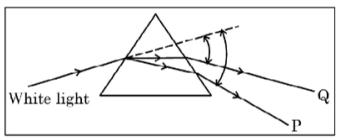
b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

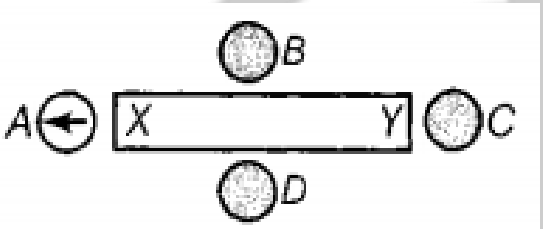
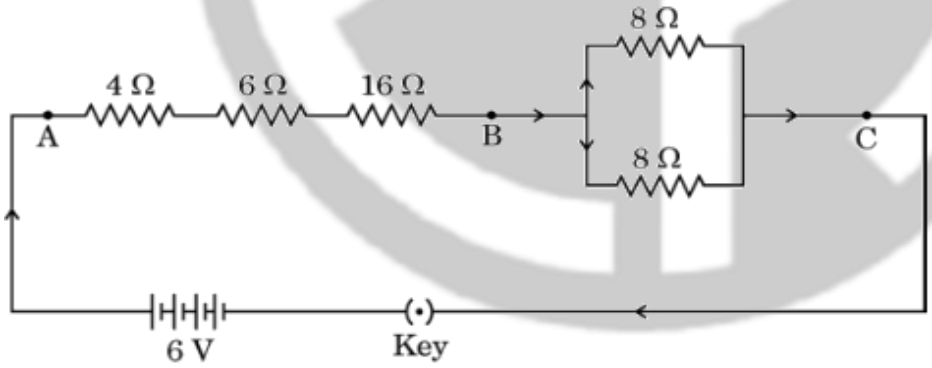
d) A is false but R is true.

25 Student added a few drops of phenolphthalein to an unknown solution A and B. Solution A acquired pink color. And solution B was added to it drop wise and the solution ultimately became colorless. Predict the nature of the solution A and B. **[2]**

26	Why are decomposition reactions called the opposite of combination reactions? Write one chemical equation each for these two types of reactions mentioning the name of the reactant(s) and the product(s) involved in the reactions. **OR** Why are decomposition reactionscalled the opposite of combination reactions? Write equations for these reactions.	**[3]**
27	(i) Name a metal for each case: (a) It does not react with cold as well as hot water but reacts with steam. (b) It does not react with any physical state of water. (ii) When calcium metal is added to water the gas evolved does not catch fire but the same gas evolved on adding sodium metal to water catches fire. Why is it so?	**[3]**
28	**Read the following text carefully and answer the questions that follow:** Those reactions in which two compounds react by an exchange of ions to form two new compounds are called double displacement reactions. A double displacement reaction usually occurs in solution and one of the products, being insoluble, precipitate out (separates as a solid). Any reaction in which an insoluble solid (called precipitate) is formed that separates from the solution is called a precipitation reaction. The reaction in which acid or acidic oxide reacts with base or basic oxide to form salt and water is called neutralisation reaction. For example, $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$ 1. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution.Mention the type of reaction. (1) 2. Balance the following chemical reaction.(1) $Pb(NO_3)_{2(aq)} + KI_{(aq)} \rightarrow PbI_{2(s)} + KNO_{3(aq)}$ 3. Barium chloride in reaction with ammonium sulphate forms barium sulphate and ammonium chloride. Which type of chemical reaction represents in this reaction?(2) **OR** Identify A in the following reaction.(2) $AlCl_{3(aq)} + 3NH_4OH_{(aq)} \rightarrow A + 3NH_4Cl_{(aq)}$	**[4]**
29	A compound C (molecular formula, $C_2H_4O_2$) reacts with Na - metal to form a compound R and evolves a gas that burns with a pop sound. Compound C on treatment with an alcohol A in presence of an acid forms a sweet - smelling	**[5]**

	compound S (molecular formula, $C_3H_6O_2$). On the addition of NaOH to C, it also gives R and water. S on treatment with NaOH solution gives back R and A. Identify C, R, A, S, and write down the reactions involved. **OR** 1. 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? 2. 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	
30	Find the incorrect statement: 1. Convex mirrors are used by the dentist to see the large images of teeth of patients. 2. Convex mirrors are used as rear - view mirrors in cars, motorcycles, scooters,etc 3. Concave mirrors are used for shaving purpose. 4. 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)	**[1]**
31	In the following diagram showing dispersion of white light by a glass prism, the colours **P** and **Q** respectively are -  a) Violet and Red b) Orange and Green	**[1]**

	c) Red and Blue d) Red and Violet	
32	**Assertion (A):** A neutral body may experience a net nonzero magnetic force. **Reason (R):** The net charge on a current - carrying wire is zero, but it can experience a force in a magnetic field. 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.	**[1]**
33	State reasons to explain these observations. 1. Our eye is more sensitive to yellow colour but even then danger signals are red in colour. 2. Violet colour is seen at the bottom of the spectrumwhen light is displaced by a prism.	**[2]**
34	An electric heater rated 1100 W operates at 220 V. Calculate (i) its resistance, and (ii) the current drawn by it. **OR** Two metallic wires A and B are connected in series.Wire A has length l and radius r, while wire B has length 2l and radius 2r. Find the ratio of total resistance of series combination and the resistance of wire A, if both the wires are of the same material?	**[2]**
35	Find the direction of magnetic field due to a current carrying circular coil held: 1. Vertically in North - South plane and an observer looking it from East sees the current to flow in anti - clockwise direction. 2. Vertically in East - West plane and an observer looking it from South sees the current to flow in anti - clockwise direction. 3. Horizontally and an observer looking at it from below and see the current flowing in clockwise direction.	**[3]**
36	1. Write the function of each of the following parts of human eye : cornea, iris, crystalline lens, ciliary muscles. 2. Millions of people of the developing countries of world are suffering from corneal blindness. These people can be cured by replacing the defective cornea with the cornea of a donated eye.	**[3]**

	A charitable society of your city has organised a campaign in your neighbourhood in order to create awareness about this fact. If you are asked to participate in this mission how would you contribute in this noble cause? a. State the objective of organising such campaigns. b. List two arguments which you would give to motivate the people to donate their eyes after death. c. List two values which are developed in the persons who actively participate and contribute in such programme.	
37	1. The diagram shows a bar magnet surrounded by four plotting compasses. Copy the diagram and mark the direction of the compass needle for each of the cases B, C and D.  2. Which is the North pole, X or Y?	**[3]**
38	**Read the following text carefully and answer the questions that follow:** Study the following circuit:  On the basis of this circuit, answer the following questions: 1. Find the value of total resistance between the points A and B. **(1)** 2. Find the resistance between the points B and C. **(1)** 3. Calculate the current drawn from the battery, when the key is closed. **(2)** **OR**	**[4]**

	In the above circuit, the 16Ω resistor or the parallel combination of two resistors of 8Ω , which one of the two will have more potential difference across its two ends? Justify your answer. **(2)**	
39	An object 5 cm in length is held 25 cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and the nature of the image formed. **OR** 1. 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. 2. 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.	**[5]**

ALL THE BEST