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10B
Roll No: 15

Ambience Public School
Test Series-2023-24
Class-X
Subject-Science
Date- 19/01/2024

Max. Marks: 80

Time Allowed: 3 hours

General Instructions:

- This question paper consists of 6 pages with **39 questions** divided in **5 sections**.
- 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** consists of 20 objective type questions carrying **1 mark** each.
- Section B** consists of 6 Very Short questions carrying **2 marks** each. Answers to these questions should be in the range of 30 to 50 words.
- Section C** consists of 7 Short Answer type questions carrying **3 marks** each. Answers to these questions should be in the range of 50 to 80 words
- Section D** consists of 3 Long Answer type questions carrying **5 marks** each. Answers to these questions should be in the range of 80 to 120 words.
- Section E** consists of 3 case-based units of assessment of **4 marks** each with sub-parts.

SECTION - A		
1.	A red brown gas is released along with oxygen and lead oxide on heating lead nitrate. It is an example of : (a) Combination reaction (b) Oxidation reaction (c) Decomposition reaction (d) Reduction reaction	1
2.	In the soap micelles (a) the ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster. (b) ionic end of soap is in the interior of the cluster and the carbon chain is out of the cluster. (c) both ionic end and carbon chain are in the interior of the cluster. (d) both ionic end and carbon chain are on the exterior of the cluster.	1
3.	The process in which a carbonate ore is heated strongly in the absence of air to convert it into metal oxide is called (a) Roasting (b) Reduction (c) Calcination (d) Smelting	1
4.	The chemical formula for Plaster of Paris is (a) $\text{CaSO}_4 \cdot 3\text{H}_2\text{O}$ (b) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (c) $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ (d) $2\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$	1
5.	C_3H_8 belongs to the homologous series of (a) Alkynes (b) Alkenes (c) Alkanes (d) Cyclo alkanes	1
6.	Roots of plants are: (a) positively geotropic (b) negatively geotropic (c) positively phototropic (d) None of these	1
7.	Bryophyllum can be propagated vegetatively by the (a) stem (b) leaf (c) root (d) flower	1

8.	A trait in an organism is influenced by (a) paternal DNA only (c) both maternal and paternal DNA	(b) maternal DNA only (d) neither by paternal nor by maternal DNA	1
9.	Which of the following can make a parallel beam of light from a point source incident on it? (a) Concave mirror as well as convex lens (b) Convex mirror as well as concave lens (c) Two plane mirrors placed at 90 degree to each other (d) Concave mirror as well as concave lens		1
10.	First link in any food chain is usually green plants because (a) they are widely distributed (b) they are fixed at one place in the soil (c) they alone have the capacity to synthesize food using sunlight (d) there are more herbivores than carnivores		1
11.	Why do magnetic field lines never intersect each other. OR What does the closeness of field lines in a magnetic field signify?		1
12.	At noon the sun appears white as (a) light is least scattered. (b) all the colours of the white light are scattered away. (c) blue colour is scattered the most. (d) red colour is scattered the most.		1
13.	Electrical resistivity of a given metallic wire depends upon (a) its length (b) its thickness (c) its shape (d) nature of the material		1
14.	Which of the following is a logical sequence of food chain (a) producer → consumer → decomposer (b) producer → decomposer → consumer (c) consumer → producer → decomposer (d) decomposer producer → consumer		1
15.	Roots of the plants absorb water from the soil through the process of: (a) diffusion (b) transpiration (c) osmosis (d) None of these		1
16.	Which of the following are energy foods? (a) Carbohydrates and fats (b) Proteins and mineral salts (c) Vitamins and minerals (d) Water and roughage		1
	Question 17 to 20 consist of two statements - Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below: (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		
17.	Assertion: AgBr is used on photographic and X-ray film. Reason: AgBr is photographic and changes to Ag and bromine in presence of sunlight and undergoes decomposition reaction.		1
18.	Assertion: The inner walls of the small intestine have finger like projections called villi are rich in blood. Reason: These villi have a large surface area to help the small intestine in completing the digestion of food.		1

	(ii) $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$ (iii) $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$	
33.	Give reason for the following: (i) Hydrogen gas is not evolved when most of the metals react with nitric acid. (ii) Zinc oxide is considered as an amphoteric oxide. (iii) Carbon shows versatile nature.	3

SECTION - D

34.	(a) Name the organs that form the excretory system in human beings. (b) Draw the structure of a nephron. Describe in brief how urine is produced in human body.	5
35.	(a) State and explain Ohm's law. (b) Define resistance and give its SI unit. (c) What is meant by 1 ohm resistance? (d) Calculate the resistivity of the material of a wire of length 1 m, radius 0.01 cm and resistance 20 ohms.	5
36.	A spherical mirror produces an image of magnification -1.0 on a screen placed at a distance of 30 cm from the pole of the mirror. (i) Write the type of mirror in this case. (ii) What is the focal length of the mirror? (iii) What is the nature of the images formed? (iv) Draw the ray diagram to show the image formation in this case.	5

SECTION - E

37.	Read the following and answer the questions: Atmospheric refraction is the phenomenon of bending of light on passing through earth's atmosphere. As we move above the surface of earth, density of air goes on decreasing. Local conditions like temperature etc. also affect the optical density of earth's atmosphere. On account of atmospheric refraction, stars seen appear higher than they actual are; advanced sunrise; delayed sunset, oval appearance of the sun at sunrise and sunset; stars twinkle, planets do not. Q.1- Due to atmospheric refraction, apparent length of the day (a) increases (b) decreases (c) remains the same (d) all of these Q.2- Apparent position of the star appears raised due to (a) atmospheric refraction (b) scattering of light (c) both (a) and (b) (d) none of these Q.3.- The sun appears oval shaped or flattened due to (a) dispersion (b) scattering (c) atmospheric refraction (d) cannot say Q.4- Twinkling of stars and non-twinkling of planets is accounted for by (a) scattering of light (b) dispersion of light (c) atmospheric refraction (d) none of these	4
38.	Read the following and answer the questions: Plants perform chemical coordination for various activities with the help of hormones. Different hormones are produced by plants. These are the chemical compounds released by stimulated cells that diffuse to various locations in plants performing different function. There is a hormone that is synthesized in the tip of shoots. When light is coming from one side of the plant, this hormone diffuses towards the shady side of the shoot. Its concentration stimulates the cells to grow longer on the side of the shoot which is away from light Thus, the plant appears to bend towards light while growing. (1) The name of the hormone being described is: (a) Auxin (b) Gibberellin (c) Cytokinin (d) Ethylene (2) The movement of shoot towards light is known as (a) Chemotropism (b) Phototropism (c) Thigmotropism (d) Geotropism (3) A young plant receives sunlight from one direction only. What will happen to its roots and shoots?	4

	<p>(a) The shoot of the plant bend towards light whereas roots bend away (b) The shoot of the plant bend towards light whereas roots also bend toward sunlight (c) The shoot of the plant bend away from the light whereas roots bends toward sunlight (d) Both b & c</p> <p>(4) The stimulus in growth of pollen tube ovule during fertilization is : (a) Pollen (b) Chemical (c) Light (d) Water</p>	
39.	<p>Read the given passage and answer the questions-</p> <p>Sex determination is the method by which distinction between males and females is established in a species. The sex of an individual is determined by specific chromosomes. These chromosomes are called sex chromosomes or allosomes. X and Y chromosomes are called sex chromosomes. The normal chromosomes other than the sex chromosomes of an individual are known as autosomes.</p> <p>Q.1- In XX-XO type of sex determination (a) females produce two different types of gametes (b) males produce two different types of gametes (c) females produce gametes with Y chromosome (d) males produce gametes with Y chromosome.</p> <p>Q.2- A couple has six daughters. What is the possibility of their having a girl next time? (a) 10% (b) 50% (c) 90% (d) 100%</p> <p>Q.3- Number of autosomes present in liver cells of a human female is (a) 22 autosomes (b) 23 autosomes (c) 22 pairs (d) 23 pairs.</p> <p>Q.4. XX-XO type of sex determination and XX-XY type of sex determination are the examples of (a) male heterogamety (b) female heterogamety (c) male homogamety (d) None of these</p>	4