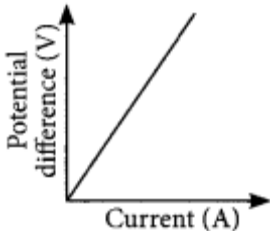


	B. is more than one C. is equal to one D. can be more than or less than one depending upon the position of the object in front of it.	
9.	With regard to various food chains operating in an ecosystem, man is a: A. Consumer B. Producer C. Producer and consumer D. Producer and decomposer.	1
10.	pH value less than 7 indicates that the solution is – A. Acidic B. Basic C. Neutral D. No effect	1
11.	Which of the following are present in a dilute Aqueous solution of hydrochloric acid? A. H_3O^+ , Cl^- B. H_3O^+ , OH^- C. Cl^- , OH^- D. H_2O_2	1
12.	When hydrochloric acid is added to barium hydroxide, a white-coloured compound is formed. Which of the following option gives the complete chemical reaction? A. $HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2HOH$ B. $2HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2HOH$ C. $2HCl + Ba(OH)_2 \rightarrow BaH_2 + 2HCl + O_2$ D. $HCl + 2Ba(OH) \rightarrow 2BaCl_2 + 2HOH + O_2$	1
13.	Name the pores in a leaf through which respiratory exchange of gases takes place. A. Lenticels B. Vacuoles C. Xylem D. Stomata	1
14.	Two pea plants one with round green seeds (RRyy) and another with wrinkled yellow (rrYY) seeds produce F1 progeny that have round yellow (RrYy) seeds. When F1 plants are self crossed, the F2 progeny will have new combination of characters. Choose the new combination from the following. (i) Round and yellow (ii) Round and green (iii) Wrinkled and yellow (iv) Wrinkled and green A. (i) and (ii) B. (i) and (iv) C. (ii) and (iii) D. (i) and (iii)	1
15.	Rays from the sun converge at a point 20cm in front of a concave mirror. Where should an object be placed so that size of its image is equal to the size of the object? A. 20 cm in front of the mirror B. 40 cm in front of the mirror C. between 20cm and 40cm in front of the mirror D. more than 40cm in front of the mirror	1
16.	Food web is constituted by- A. relationship between the organisms and the environment B. relationship between plants and animals C. various interlinked food chains in an ecosystem D. relationship between animals and environment	1
Question No. 17 to 20 consist of two statements – Assertion A. and Reason (R). Answer these questions 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, and 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 A. : Magnetic lines do not intersect each other. Reason (R) : Magnetic lines moves from north pole to south pole.	1
18.	Assertion(A): Biodegradable substances result in the formation of compost and natural replenishment. Reason (R): It is due to breakdown of complex inorganic substances into simple organic substances.	1
19.	Assertion A. : HIV-AIDS is a bacterial disease. Reason (R) : Syphilis is caused by a bacteria.	1

20.	Assertion A. : Decomposition of vegetable matter into compost is an example of exothermic reactions. Reason (R) : Exothermic reaction are those reactions in which heat is evolved.	1
Section – B		
Question No. 21 to 26 are very short answer questions.		
21.	What is the role of the acid in our stomach?	2
22.	Light enters from air to glass having refractive index 1.50. What is the speed of light in the glass ? (The speed of light in vacuum is $3 \times 10^8 \text{ ms}^{-1}$).	2
23.	In the following food chain, plants provide 500 J of energy to rats. How much energy will be available to hawks from snakes? Plants → Rats → Snakes → Hawks	2
24.	A silver article generally turns black when kept in the open for a few days. The article, when rubbed with toothpaste again, starts shining. Why do silver articles turn black when kept in the open for a few days? Name the phenomenon involved.	2
25.	What are the components of the transport system in highly organised plants? Or Describe double circulation in human beings.	2
26.	Draw V-I graph for an ohmic conductor and list its two important features.	2
Section – C		
Question No. 27 to 33 are short answer questions.		
27.	A. What are amphoteric oxides ? B. Write chemical equations that show aluminium oxide reacts with acid as well as base. Or A. Write two properties of gold which make it the most suitable metal for ornaments. B. Name two metals which are the best conductors of heat. C. Name two metals which melt when you keep them on your palm.	1+2 1+1+1
28.	A. How does the creation of variations in a species promote survival? B. Why is the progeny always tall when a tall pea plant is crossed with a short pea plant? C. A man with blood group A marries a woman with blood group O and their daughter has blood group O. Is this information enough to tell you which of the traits – blood group A or O is dominant ? Why or why not ?	1+1+1
29.	A. V-I graph for a conductor is as shown in the figure  (i) What do you infer from this graph? (ii) State the law expressed here. B. Define resistance and give its SI unit.	1+1+1
30.	A. Why does calcium start floating when it reacts with water? Write the balanced chemical equation of the reaction. B. Name two metals which do not react with water.	2+1
31.	A. Why are some patients of diabetes treated by giving injections of insulin? B. How does phototropism occur in plants? Or A. Which part of the brain maintains posture and equilibrium of the body? B. How do auxins promote the growth of a tendril around a support?	1 2 1 2

32.	A copper wire has diameter 0.5 mm and resistivity of $1.6 \times 10^{-8} \Omega \text{ m}$. What will be the length of this wire to make its resistance 10Ω ? How much does the resistance change if the diameter is doubled?	1.5 + 1.5
33.	A student is unable to see clearly the words written on the black board placed at a distance of approximately 3 m from him. A. Name the defect of vision the boy is suffering from. B. State the possible causes of this defect. C. Explain the method of correcting it with the help of ray diagram.	1+1+1
Section – D Question No. 34 to 36 are long answer questions.		
34.	A. Draw a well labelled diagram of the longitudinal section of a flower. B. Name the method by which Spirogyra reproduces under favourable conditions. Is this method sexual or asexual?	3 2
35.	Size of image of an object by a mirror having a focal length of 20 cm is observed to be reduced to 1/3rd of its size. At what distance the object has been placed from the mirror? What is the nature of the image and the mirror? Or A. List two possible ways in which a concave mirror can produce a magnified image of an object placed in front of it. B. Draw ray diagrams for the following cases when an incident ray of light: (i) passing through centre of curvature of a concave mirror is incident on it. (ii) parallel to principal axis is incident on convex mirror. (iii) is passing through focus of a concave mirror incident on it.	5 2+3
36.	A. What is meant by isomers? Draw the structures of two isomers of butane. Explain why we cannot have isomers of first three members of alkane series? B. State the reason why carbon can neither form C+4 cation nor C-4 anions but forms covalent compound.	3+2
Section – E Question No. 37 to 39 are case - based / data - based questions.		
37.	An insulated copper wire wound on a cylindrical cardboard tube such that its length is greater than its diameter is called a solenoid. When an electric current is passed through the solenoid, it produces a magnetic field around it. The magnetic field produced by a current-carrying solenoid is similar to the magnetic field produced by a bar magnet. The field lines inside the solenoid are in the form of parallel straight lines. The strong magnetic field produced inside a current-carrying solenoid can be used to magnetise a piece of magnetic material like soft iron, when placed inside the solenoid. The strength of magnetic field produced by a current carrying solenoid is directly proportional to the number of turns and strength of current in the solenoid. (i) The strength of magnetic field inside a long current -carrying straight solenoid is A. more at the ends than at the centre B. minimum in the middle C. same at all points D. found to increase from one end to the other. (ii) The most suitable material for making the core of an electro magnet is- A. Steel B. Iron C. Soft Iron D. Aluminium	1+1+1+1

	<p>(iii) For a current in a long straight solenoid N-and S-poles are created at the two ends. Among the following statements, the incorrect statement is</p> <p>A. The field lines inside the solenoid are in the form of straight lines which indicates that the magnetic field is the same at all points inside the solenoid. B. The strong magnetic field produced inside the solenoid can be used to magnetise a piece of magnetic material like soft iron, when placed inside the coil. C. The pattern of the magnetic field associated with the solenoid is different from the pattern of the magnetic field around a bar magnet. D. The N- and S-poles exchange position when the direction of current through the solenoid is reversed.</p> <p>(iv) A long solenoid carrying a current produces a magnetic field B along its axis. If the current is double and the number of turns per cm is halved, then new value of magnetic field is</p> <p>A. B B. 2B C. 4B D. B/2</p>	
38.	<p>Read the following and answer the questions: The growing size of the human population is a cause of concern for all people. The rate of birth and death in a given population will determine its size. Reproduction is the process by which organisms increase their population. The process of sexual maturation for reproduction is gradual and takes place while general body growth is still going on. Some degree of sexual maturation does not necessarily mean that the mind or body is ready for sexual acts or for having and bringing up children. Various contraceptive devices are being used by human beings to control the size of population.</p> <p>i) What are common signs of sexual maturation in boys-</p> <p>A. Broadening of shoulders B. Development of mammary glands C. Broadening of waist D. High pitch of voice</p> <p>ii) Common sign of sexual maturation in girls is</p> <p>A. Low pitch voice B. Appearance of moustaches and beard C. Development of mammary glands D. Broadening of shoulders</p> <p>iii) Which contraceptive method changes the hormonal balance of the body</p> <p>A. Condoms B. Diaphragms C. Oral pills D. Both A and B</p> <p>iv) What should be maintained for healthy society</p> <p>A. Rate of birth and death rate B. Male and female sex ratio C. Child sex ratio D. None of these</p>	1+1+1+1
39.	<p>Most dirt is oily in nature and as you know, oil does not dissolve in water. The molecules of soap are sodium or potassium salts of long-chain carboxylic acids. The ionic-end of soap interacts with water while the carbon chain interacts with oil. The soap molecules, thus form structures called micelles, where one end of the molecules is towards the oil droplet while the ionic-end faces outside. This forms an emulsion in water. The soap micelle thus helps in pulling out the dirt in water and we can wash our clothes clean.</p> <p>A) What is hydrophobic end? B) Draw the structure of micelle. C) What is scum? D) What is hard water?</p>	1+1+1+1