

- (c) Blocking of _____ prevents pregnancy.
 (i) 5 (ii) 6
 (iii) 7 (iv) 8
- (d) The period of adolescence when the reproductive tissues begin to mature is _____. 4
5. Which among the following statement(s) is (are) true? 1
- Exposure of silver chloride to sunlight for a long duration turns grey due to :
- (i) The formation of silver by decomposition of silver chloride.
 (ii) Sublimation of silver chloride.
 (iii) Decomposition of chlorine gas from silver chloride.
 (iv) Oxidation of silver chloride.
- (a) (i) only (b) (i) and (iii)
 (c) (ii) and (iii) (d) (iv) only
6. The pH of the gastric juices released during digestion is : 1
- (a) less than 7 (b) more than 7

OR

In Mendeleev's periodic table, gaps were left for the elements to be discovered later. Which of the following elements found a place in the periodic table later ?

- (a) Germanium (b) Chlorine
 (c) Oxygen (d) Silicon
7. The filtration units of kidneys are called : 1
- (a) ureter (b) urethra
 (c) neurons (d) nephrons
8. In a neuron, conversion of electrical signal to a chemical signal occurs at/in : 1
- (a) cell body (b) axonal end
 (c) dendritic end (d) axon
9. Magnification produced by a rear-view mirror fitted in vehicles : 1
- (a) is less than one.
 (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.
10. The change in focal length of an eye lens is caused by the action of the : 1
- (a) pupil (b) retina
 (c) ciliary muscles (d) iris
11. Which of the following phenomena contributes significantly to the reddish appearance of the Sun at sunrise or sunset ? 1
- (a) Dispersion of light (b) Scattering of light
12. In an electrical circuit, three incandescent bulbs A, B, and C of rating 40 W, 100 W, and 60 W, respectively are connected in parallel to an electric source. Which of the following is likely to happen regarding their brightness? 1
- (a) Brightness of all the bulbs will be the same.
 (b) Brightness of bulb A will be the maximum.
 (c) Brightness of bulb B will be more than that of A and C.
 (d) Brightness of bulb C will be less than that of B.

For question numbers 13 and 14, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below :

- (i) Both A and R are true and R is correct explanation of the assertion.
- (ii) Both A and R are true but R is not the correct explanation of the assertion.
- (iii) A is true but R is false.
- (iv) A is false but R is true.

13. Assertion (A) : Our body maintains blood sugar level.

Reason (R) : Pancreas secretes insulin which helps to regulate blood sugar levels in the body. 1

OR

Assertion (A) : At puberty, in boys, voice begins to crack and thick hair grows on face.

Reason (R) : At puberty, there is decreased secretion of testosterone in boys.

14. Assertion (A) : Vacuum is a non-dispersive medium.

Reason (R) : In vacuum, the speed of light is independent of wavelength. 1

SECTION B

[AI] 15. The pH of salt used to make tasty and crispy pakoras is 14. Identify the salt and write a chemical equation for its formation. List its two uses. 3

- (a) For the preparation of cakes, baking powder is used. If at home your mother uses baking soda instead of baking powder, how will it affect the taste of the cake and why ?
- (b) How is baking soda be converted into baking powder ?
- (c) What makes the cake soft and spongy ?

16. What are covalent compounds? How are they different from ionic compounds? List any two properties of covalent compounds. 3

[AI] 17. Write the electronic configuration of two elements P (atomic number 17) and Q (atomic number 19) and determine their group numbers and period numbers in the Modern Periodic Table. 3

18. Name the hormone which regulates carbohydrate, protein and fat metabolism in our body. Which gland secretes this hormone ? Why is it important for us to have iodised salt in our diet ? 3

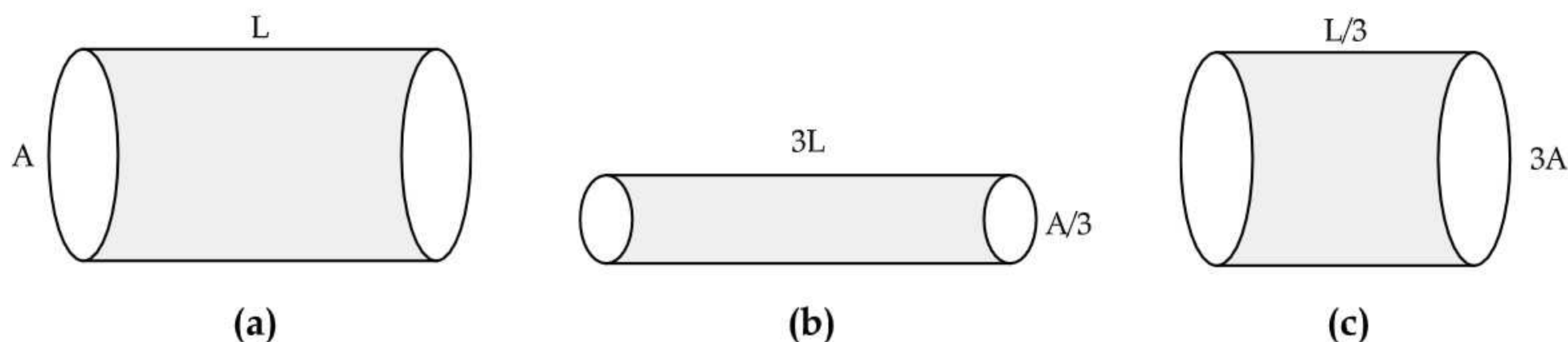
[AI] 19. What is vegetative propagation ? State two advantages and two disadvantages of this method. 3

OR

Reproduction is one of the most important characteristics of living beings. Give three reasons in support of the statement.

20. What is a rainbow? Draw a labelled diagram to show the formation of a rainbow. 3

21. The figure below shows three cylindrical copper conductors along with their face areas and lengths. Compare the resistance and the resistivity of the three conductors. Justify your answer. 3



22. Explain whether an alpha particle will experience any force in a magnetic field if : 3

- (i) It is placed in the field at rest.
- (ii) It moves in the magnetic field parallel to field lines.
- (iii) It moves in the magnetic field perpendicular to field lines.

23. While teaching the chapter "Our Environment", the teacher stressed upon the harmful effects of burning of fossil fuels, plastic paper etc. The students noticed the extensive use of plastic and polythene in daily life, which can be avoided and the surroundings can be kept clean. They decided to make their school "Plastic and Polythene" free and motivated each other for its minimum use. 3

- (a) Why should the use of polythene and plastic be reduced in daily life?
- (b) In what way the students would have avoided the use of plastic and polythene in their school?
- (c) How the students would have motivated each other for the success of their decision.

OR

AI What is 'Sustainable Management of Natural Resources'? Why is it necessary? What one out of reuse and recycle, would you practise in your daily life and why?

24. (a) Water is an elixir of life, a very important natural resource. Your science teacher wants you to prepare a plan for a formative assessment activity, "How to save water, the vital natural resource". Write any two ways that you will suggest to bring awareness in your neighbourhood, on 'how to save water'.
- (b) Name and explain any one way by which the underground water table level does not go down further.

3

SECTION C

AI 25. (i) Define corrosion.

- (ii) What is corrosion of iron called?
- (iii) How will you recognise the corrosion of silver?
- (iv) Why corrosion of iron is a serious problem?
- (v) How can we prevent corrosion of iron?

5

OR

Write the chemical name of $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ and Na_2CO_3 . Write the significance of $10\text{H}_2\text{O}$. Mention the term used for water molecules attached with a salt. With the help of a chemical equation, explain the method of preparation of both $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ and Na_2CO_3 . Also, list two uses of $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$.

26. What are micelles? Why does it form when soap is added to water? Will a micelle be formed in other solvents such as ethanol also? State briefly how the formation of micelles help to clean the clothes having oily spots. 5
27. (i) Define receptor and state their location in our body. Mention any two receptors present in our forebrain and their functions. 5
- (ii) How do nerve impulses travel in our body?

OR

Give one example each of unisexual and bisexual flowers. Differentiate between the two types of pollination that occur in flowers. What happens when a pollen lands on a suitable stigma? Write about the events that occur till the seed formation in the ovary.

I 28. How do Mendel's experiments show that

5

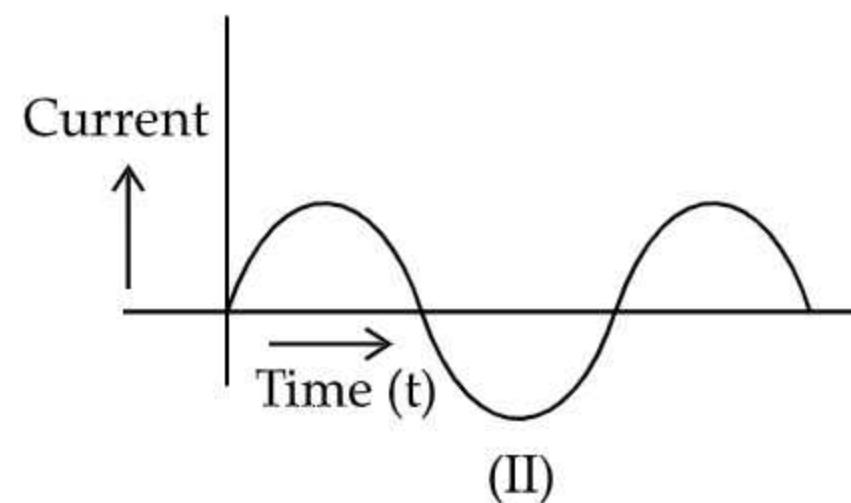
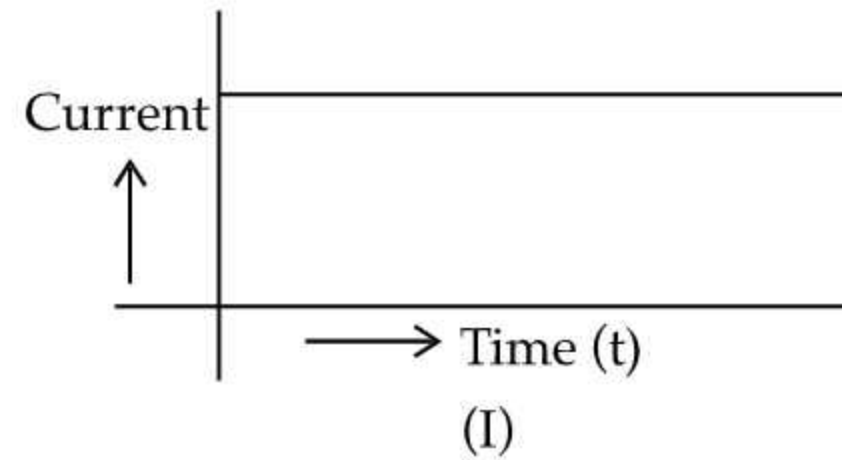
- (a) traits may be dominant or recessive?
- (b) inheritance of two traits is independent of each other?

29. (a) Draw a labelled circuit diagram to study the relationship between the current (I) flowing through a conductor and the potential difference (V) applied across its two ends. State the formula correlating the I in a conductor and the V across it. Also show their relationship by drawing a diagram.
- (b) What would be the resistance of a resistor if the current flowing through it is 0.15 A when the potential difference across it is 1.05 V ?

5

OR

Study the following current-time graphs from two different sources.



- (i) Use above graphs to list differences between the current in the two cases.
- (ii) Name the type of current in two cases.
- (iii) Identify one source each for these currents.
- (iv) What is meant by the statement that “the frequency of current in India is 50 Hz ?”
30. (a) To construct a ray diagram we use two rays which are so chosen that it is easy to know their directions after reflection from the mirror. List two such rays and state the path of these rays after reflection in case of concave mirrors. Use these two rays and draw ray diagram to locate the image of an object placed between pole and focus of a concave mirror.
- (b) A concave mirror produces three times magnified image on a screen. If the object is placed 20 cm in front of the mirror, how far is the screen from the object ?

5