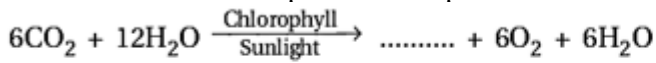




Section A

Write the answer of the following questions. [Each carries 1 Mark] [24]

1. Choose the correct option to complete the following reaction



- (A) $\text{C}_2\text{H}_5\text{OH}$ (B) $\text{C}_6\text{H}_{12}\text{O}_6$ (C) CH_4 (D) CH_3COOH

2. True or False : As the pH value of a solution increases from 7 to 14, it represents a decrease in concentration of H^+ ions.

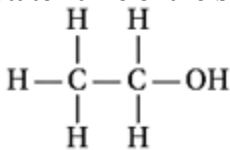
3. Write the chemical formula of Bleaching powder.

4. Which of the following is a synthetic indicator ?

- (A) Phenolphthalein (B) Litmus (C) Turmeric (D) Onion

5. True or False : Tooth decay starts when pH of the mouth is lower than 5.5

6. State name of the below compound from its structure.



- (A) Ethane (B) Ethanol (C) Ethene (D) Propanol

7. True or False : The soap molecules from structures called molecules where one end of molecules is towards the oil droplet while ionic end faces outside.

8. The kidneys in human beings are a part of the system for

- (A) nutrition (B) excretion (C) respiration (D) transportation

Ri Thess have thick elastic walls. (capillary, vein, artery)

10. The breakdown of pyruvate to give carbon-di-oxide, water, energy takes place in which organelle ?

11. 'True or False : The reflex action is controlled by the heart.

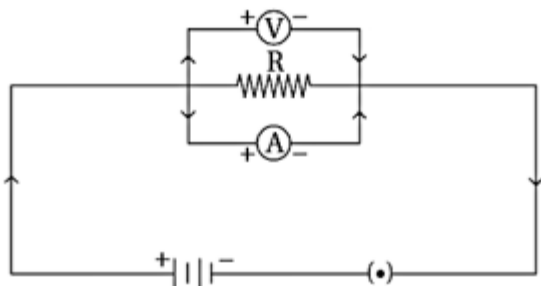
12. Match the following correctly :

- | | |
|-----------------|---|
| 1) Thyroxine | a) Development of female sex organs |
| 2) Testosterone | b) regulates metabolism for body growth |
| | c) Development of male sex organs |

13. In human being, the number of chromosomes in a gamete is (23,46,22)

14. Define : Dispersion of Light.

15. To check Ohm's law, teacher says students to join circuit and students join circuit as below.



Teacher asked the question to students. Which component is not properly connected in circuit?

- (A) Voltmeter (B) Resistance (C) Ammeter (D) Battery

16. Tungsten is used almost exclusively as filaments in electric bulb because

- (A) its resistivity is high and melting point is low (B) both the resistivity and melting point are high
(C) its resistivity is low and melting point is high (D) both the resistivity and melting point are low

17. Write a note on Biological magnification ?

18. Match the following correctly :

- | | |
|-------------------|------------------------|
| Trophic Level | Type of Consumer |
| (1) Trophic level | (a) Secondary consumer |
| (2) Trophic level | (b) Primary consumer |
| | (c) Tertiary consumer |

19. Running cat and buffaloes chewing cud are not related movement.

- (A) Growth (B) Development (C) Diffusion (D) Division

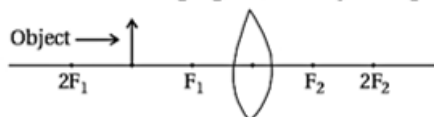
20. The action which maintains control and coordination in sudden situation arising in environment is

- (A) Heart beats (B) Breathing (C) Reflex action (D) Transport of blood

21. The process of introducing food-source of energy into the body is called

- (A) Nutrition (B) digestion (C) Absorption (D) movement

- 22.....Process is not necessary for living organisms to remain alive.
 (A) Respiration (B) Reproduction (C) Nutrition (D) Excretion
23. True or False : Galvanisation is a method of protecting steel and iron from rusting.
24. In the following figure, an object is placed between F_1 and $2F_1$ Where will be the image formed ?

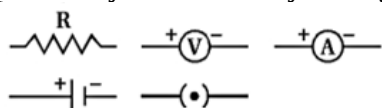


- (A) Beyond $2F_2$ (B) At F_2 (C) Between $2F_2$ and F_2 (D) Infinity

Section B

Write the answer of the following questions. [Each carries 2 Marks] [any 9] [18]

25. Write differences between endothermic reactions and exothermic reactions.
 26. Write differences between Metals and Nonmetals.
 27. Give Reason : Aluminium with Nitric acid does not produce hydrogen gas.
 28. Give difference : Arteries - Veins
 29. What is pollination ? Explain difference between self pollination and cross pollination.
 30. Draw a diagram of sex determination in human being.
 31. What is reflection of light ? Write laws of reflection of light.
 32. Symbols of some components are given below. Using all of them only once draw appropriate circuit diagram. (Assume you are already having the wires for connection. Also name each component used.)

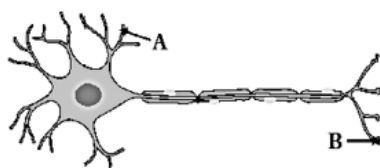


33. What is decomposer ? What is the role of decomposers in the ecosystem ?
 34. What is ozone and how does it affect any ecosystem ?
 35. Write the differences between Biotic factor and Abiotic factor ?
 36. What is meant by saying that the potential difference between two points is 1 V ?
 37. Metal X is found in nature as an ore of sulphide as XS. This metal is used in galvanisation of iron articles.
 a) Identify the metal X.
 b) Explain the process with chemical equations how to convert this sulphide ore XS into metal X.

Section C

Write the answer of the following questions. [Each carries 3 Marks] [any 6] [18]

38. Explain the manufacturing of bleaching powder with chemical reactions. Write any two uses of bleaching powder.
 39. Answer the following questions :
 a) Explain the importance of pH in human digestive system.
 b) Explain the importance of pH change as the causes of tooth decay.
 40. From the diagram given below name the parts A and B, Also write the function of Part A and Part B.



41. Explain the different methods of contraception.
 42. State the different types of asexual reproduction and explain binary fission in amoeba.
 43. Explain the following term :
 (i) Ecosystem (ii) Food chain (iii) Biological magnification
 44. Answer the following questions :
 a) Draw a schematic diagram of domestic electric circuit.
 b) What is the importance of fuse and earth wire in domestic electric circuit ?
 45. Describe combination reaction with examples,
 46. Explain the electrolytic refining of copper with the help of a diagram.

Section D

Write the answer of the following questions. [Each carries 4 Marks] [any 5] [20]

47. What is Covalent bond ? Explain Covalent bond in methane and nitrogen molecules with figure.
 48. What is excretion ? Draw human excretory system and describe its structure.
 49. Answer the following questions :
 a) What is photosynthesis ? Write a balanced chemical equation of photosynthesis.
 b) Draw a neat labelled diagram of open and closed stomatal pore.
 50. Shyam a student has difficulty reading the blackboard whole sitting in the last row. What could be the defect the child is suffering from ? How can it be corrected ? Explain with help of appropriate diagram.

51. A person is sitting in a library. He is able to read the details of the wall of the library which is at a distance of 15 feet. He is not able to read the printed letters clearly of a book in front of him. Answer the following questions on the basis of the above case.

a) What is the defect of vision of the person ?

b) Write the conditions of how this defect arises ?

c) How will you correct this defect ? Also draw a diagram showing the correction of this defective eye of the person

52. Let the resistors in parallel connection be R_1 , R_2 , R_3 . Derive an equation to find equivalent resistance

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \text{ in a parallel connection.}$$

53. What is Solenoid ? Discuss the characteristics of magnetic field generated from a current-carrying solenoid coil with figure.

54. A pencil, 4.0 cm in size, is placed at 25.0 cm in front of a concave mirror of focal length 15.0 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image ? Find the nature and the size of the image.

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