



Gurukul Global School
Class - X
Science (086)



Date: 13-07-2023

M.M. 50

Time: 2 hrs.

General Instructions:

- (i) This question paper consists of 24 questions in 5 sections.
- (ii) All questions are compulsory.
- (iii) Section A consists of 12 objective type questions carrying 1 mark each.
- (iv) Section B consists of 4 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
- (v) Section C consists of 4 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
- (vi) Section D consists of 2 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
- (vii) Section E consists of 2 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION-A

1. Which part of nephron allows the selective reabsorption of useful substances like glucose, amino acids, salts and water into the blood capillaries? **B**
 - a) Tubule
 - b) Glomerulus
 - c) Bowman's capsule
 - d) Ureter

(1)
2. Roots of the plants absorb water from the soil through the process of: **B**
 - a) Diffusion
 - b) Transpiration
 - c) Osmosis
 - d) None of these

(1)
3. Dwarfism results by - **B**
 - a) Excess secretion of thyroxin
 - b) Less secretion of growth hormone
 - c) Less secretion of adrenaline
 - d) Excess secretion of growth hormone.

(1)
4. Movement of food through the oesophagus is due to **B**
 - a) Lubrication by saliva
 - b) Peristalsis
 - c) Diffusion
 - d) Turgor pressure

(1)
5. Spinal cord originates from **B**
 - a) Medulla
 - b) Pons
 - c) Cerebrum
 - d) Cerebellum

(1)
6. How many water molecules does hydrated calcium sulphate contain? **C**
 - a) 5
 - b) 10
 - c) 7
 - d) 2

(1)
7. Alkalis are **C**
 - a) acids, which are soluble in water
 - b) acids, which are insoluble in water
 - c) bases, which are insoluble in water
 - d) bases, which are soluble in water

(1)
8. Which of the following statements is correct about an aqueous solution of an acid and of a base?
 - (i) Higher the pH, stronger the acid
 - (ii) Higher the pH, weaker the acid

(1)

(iii) Lower the pH, stronger the base

a) (i) and (iii)

c) (i) and (iv)

(iv) Lower the pH, weaker the base

b) (ii) and (iii)

d) (ii) and (iv)

9. What type of chemical reactions take place when electricity is passed through water? C (1)

a) Displacement

b) Combination

c) Decomposition

d) Double displacement

10. One half of a convex lens is covered with a black paper. What type of image will be produced? P (1)

a) Half

b) Full

c) One-fourth

d) No image is produced

Note:

Question No. 11 to 12 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.

11. **Assertion (A)** : The acid must always be added to water with constant stirring.

Reason (R) : Mixing of an acid with water decreases the concentration of H^+ ions per unit volume. (1)

12. **Assertion**: Abscisic acid effects wilting of leaves. (1)

Reason: It is a growth inhibitor. (1)

SECTION-B

13. An object is placed at a distance of 50 cm from a concave lens of focal length 20 cm. Find the nature and position of the image. Also, find the magnification of the lens. P (2)

14. Name the green dot like structures in some cells observed by a student when a leaf peel was viewed under a microscope. What is this green colour due to? B (2)

15. What happens when nitric acid is added to egg shells? C (2)

16. Write an equation for the Chlor - alkali process. Also, mention the products so obtained. C (2)

SECTION-C

17. What happens when a second identical prism is placed in an inverted position with respect to the first prism? Draw a labeled ray diagram to illustrate it. P (3)

18. Name the hormones secreted by the following endocrine glands and specify one function of each: B (1)

a) Thyroid (1)

b) Adrenal (1)

c) Pancreas (1)

19. a) Explain the method of preparation of bleaching powder. C (2)

b) List in tabular form two differences between an acid and a base based on their chemical properties. C (1)

20. a) A student prepared solutions of C
an acid and
(ii) a base in two separate beakers. She forgot to label the solutions and litmus paper is not available in the laboratory. Since both the solutions are colourless, how will she distinguish between the two? (2)

b) Give an example of photolytic decomposition reaction. C (1)

Write down the
a) Pupil
c) Ciliary
2-a) Dr

SECTION-D

Write down the working of human eye. Write down the functions of P

a) Pupil

c) Ciliary Muscles.

b) Retina

d) Iris

contains enormous number of light sensitive cells (5)
thick muscular diaphragm amount of light entering the eye

22. a) Draw a neat diagram of a neuron and label B

(i) dendrite

(ii) axon

(iii) cell body and nerve ending

(1)

(1)

(1)

b) Which part of the human brain is: B

(i) The main thinking part of the brain? *four brain*

(ii) Responsible for maintaining the posture and balance of the body? *cerebellum*

(1)

(1)

SECTION-E

23. P The splitting of a beam of white light into its seven constituent colours, when it passes through a glass prism, is called the dispersion of light. When a beam of white light enters a prism, it gets refracted and splits into its seven constituent colours, viz. violet, indigo, blue, green, yellow, orange, and red. This splitting of the light ray occurs because of the different angles of bending for each colour. Hence, each colour while passing through the prism bends at different angles with respect to the incident beam. This gives rise to the formation of the coloured spectrum.

a) What is the cause of dispersion of light by prism? *refraction of light*

b) Which colour of white light suffers least deviation when a beam of white light is passed through the prism?

c) Which colour of white light suffers most deviation when a beam of white light is passed through the prism?

d) Among the seven colours visible due to splitting of white light through prism which colour has shortest wavelength?

(1)

(1)

(1)

(1)

24. B The food material taken in during the process of nutrition is used in cells to provide energy for various life processes. Diverse organisms do this in different ways – some use oxygen to break-down glucose completely into carbon dioxide and water, some use other pathways that do not involve oxygen. In all cases, the first step is the break-down of glucose, a six-carbon molecule, into a three-carbon molecule called pyruvate. This process takes place in the cytoplasm.

a) What type of respiration takes place in human muscle during vigorous physical exercise? Give reasons for your answer.

b) In which form is energy produced in our body?

c) Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?

(2)

(1)

(1)
