MODEL QUESTION PAPER
(SESSION - 2023-24)

SUBJECT - SCIENCE

Time: 3:15 Hrs. CLASS - X M.M. : 70

i. First 15 minutes are allotted for the candidates to read the question paper.

ii. The question paper is divided into two part – part A and part B

iii. part A and part B are divided into three sub-sections (1), (2) and (3)

iv. In part A of question paper there are multiple choice questions in which select the correct alternative and then by blue or black ball point pen fill completely in the circle in OMR answer sheet. Do not erase, cut or use whitener on OMR answer sheet after answering.

v. One mark is allotted for each question in the multiple choice question of Part A.

vi. Part B has descriptive questions.

vii. The allotted Marks are given in each question.

viii. All the questions of sub-section of part B are to be attempted all at a time. Start each sub-section from a new page.

ix. All questions are compulsory .

PART - A

(**MULTIPLE CHOICE QUESTION**)

SUB-SECTION - 1

1. A transparent medium surrounded by two surfaces whose one or both surfaces may be curved are known as : (1)

   (A) Spherical Mirror

   (B) Radius

   (C) Spherical Lens

   (D) Plane Mirror

2. Which mirror is used by dentists to see enlarged image of tooth of patients:

   (A) Concave Mirror (1)

   (B) Plane Mirror

   (C) Convex Mirror

   (D) All of them

3. If an object is placed between 2F and infinity infront of a convex lens. Image formed will be : (1)

   (A) Real, inverted and small

   (B) Real, inverted and large

   (C) Virtual, inverted and large

   (D) Virtual, erect and large

4. The human eye can focus objects at different distances by adjusting the focal length of the lens . This is due to : (1)

(A) Presbyopia

(B) Power of accommodation

(C) Myopia

(D) Hypermetropia

5. Match the physical quantities of column 'A' with their S.I. units given in column 'B' : (1)

A	B
(1) Potential Difference	(i) Ampere
(2) Electric Current	(ii) Watt
(3) Electric Power	(iii) OHM
(4) Resistance	(iv) Volt

(A) 1 - iv 2 - ii 3 - iii 4 - i

(B) 1 - i 2 - ii 3 - iii 4 - iv

(C) 1 - i 2 - iii 3 - ii 4 - iv

(D) 1 - iv 2 - i 3 - ii 4 - iii

6. Two conducting wires of the same material and of equal lengths and equal diameters are first connected in series and then parallel in a circuit across the same potential difference. The ratio of heat produced in series and parallel combination would be- (1)

(A) 1 : 2

(B) 2 : 1

(C) 1 : 4

(D) 4 : 1

7. The magnetic field inside a long straight current carrying solenoid is :

(A) Zero (1)

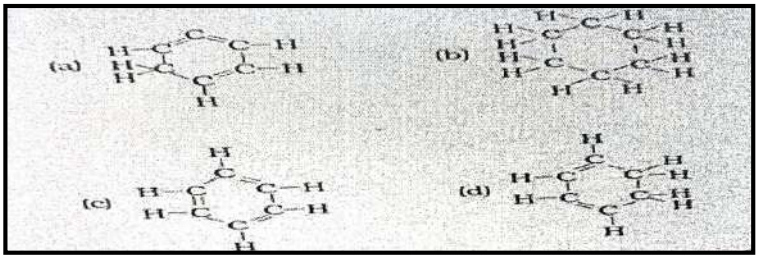
(B) Decreases towards its end point

(C) Increases towards its end point

(D) Remains same at all points

SUB-SECTION - 2

8. Structural formula of Benzene is : (1)



(A) a

(B) b

(C) c

(D) d

9. Which of the following belongs to homologous series : (1)

(i) CH_4 and C_2H_6

(ii) CH_3OH and CH_3COOH

(iii) C_2H_6 and CH_3OH

(iv) CH_3OH and C_2H_5OH

Choose the correct option :

(A) (i) and (ii)

(B) (i) and (iv)

(C) (ii) and (iv)

(D) (ii) and (iii)

10. Naturally occurring elements or compounds obtained from earth's crust are called _____. (1)

(A) Ore

(B) Gangue

(C) Mineral

(D) Metal

11. When does tooth decay begins : (1)

(A) When pH of mouth exceeds 5.5

(B) When pH of mouth is less than 5.5

(C) When pH of mouth is 7

(D) None of the above

12. Assertion: (1)

(i) Zinc reacts with sulphuric acid and produce zinc sulphate and hydrogen gas. This is displacement reaction.

Reason :

(ii) Zinc reacts with oxygen and produce zinc oxide.

(A) Both (i) and (ii) are true and reason (ii) is correct explanation of assertion.

(B) Both (i) and (ii) are true but reason is not correct explanation of assertion.

(C) Assertion (i) is true but reason (ii) is false.

(D) Assertion (i) and reason (ii) both are false.

13. Complete the following chemical reactions : (1)

$NaOH + \_\_\_\_\_ \rightarrow CH_3COONa + H_2O$

(A) CH_3OH

(B) CH_3COOH

(C) C_2H_5OH

(D) CH_3CH_2COOH

SUB-SECTION-3

14. Route of air flow during inhalation : (1)

(A) Nasal chamber → Throat → Pharynx → Trachea → Lungs

(B) Nasal Passage → Nasal Chamber → Trachea → Pharynx→ Vocal Alveoli

(C) Throat → Nasal Chamber → Pharynx → Lungs

(D) Nasal Chamber → Pharynx → Throat → Trachea → Alveoli

15. Choose the correct option by reading following statements and reason (1)

Assertion - The sex of the child is determined by the chromosome received from the father.

Reason - There is one X and one Y chromosome in human male.

(A) Assertion and reason both are true. Reason explain the assertion correctly.

(B) Assertion and reason both are true but reason does not explain the assertion.

(C) Assertion is true but reason is false.

(D) Assertion is false but reason is true.

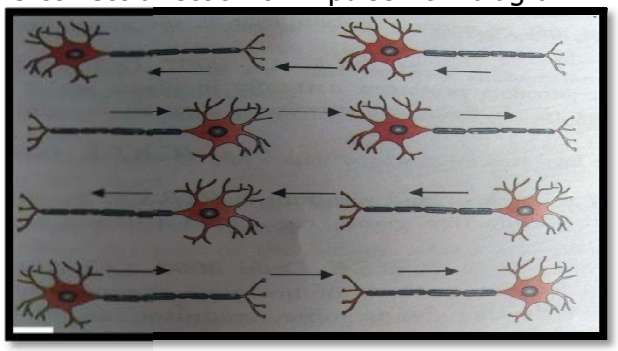
16. Which is correct direction of impulse flow diagram : (1)

(A)

(B)

(C)

(D)



17. Which statement is not true about thyroxin : (1)

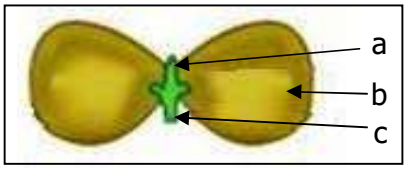
(A) Iron is necessary for synthesis of thyroxin.

(B) It regulates metabolism of carbohydrate, protein and fat in the body.

(C) Thyroid gland requires iodine for the synthesis of thyroxin.

(D) Thyroxin is also called thyroid harmone.

18. State the correct sequence of a, b and c in the following diagram : (1)



(A) Cotyledon, Plumule, Radicle

(B) Plumule, Radicle, Cotyledon

(C) Plumule, Cotyledon, Radicle

(D) Radicle, Cotyledon, Plumule

19. Offsprings which are produced from asexual reproduction have more similarities because : (1)

(i) Only one of the parent participates in asexual reproduction.

(ii) Gametes do not participates in asexual reproduction.

(iii) Asexual reproduction takes place before sexual reproduction.

(iii) Asexual reproduction takes place after sexual reproduction.

(A) (i) and (ii)

(B) (i) and (iii)

(C) (ii) and (iv)

(D) (iii) and (iv)

20. Who is at the third trophic level in a food chain? (1)

(A) Carnivorous

(B) Herbivorous

(C) Decomposers

(D) Producers

PART –B

SUB-SECTION –1

1. (i) What is visual defect? And write down it's type. (2+2=4)

   (ii) Why do we see rainbow only after the rain?

2. (i) Why is a convex lens called a converging lens? (2+2=4)

   (ii) Write the uses of concave lens and convex lens.

3. (i) A 4 ohm resistor is generating 100 joules of heat per second. Find the potential difference across the ends of the resistor. (2+2=4)

   (ii) An electric iron of resistance 20 ohm takes a constant current of 5 ampere. Calculate the heat generated in 30 seconds.

4. (i) Why do two magnetic lines of forces do not intersect to each other? (2+2+2=6)

   (ii) Write the characteristic of magnetic field lines.

   (iii) When is the force applied on a current carrying conductor located in a magnetic field maximum?

   OR

   (i) How does fuse wire protect electrical appliances? (2+4=6)

   (ii) Under what conditions is a permanent magnet obtained by using a current carrying solenoid? Verify the answer by drawing a circuit diagram.

SUB-SECTION - 2

5. Write a balanced equation for the following reactions : (1+1+1+1=4)

   (i) Dilute sulphuric acid reacts with granular zinc.

   (ii) Dilute hydrochloric acid reacts with magnesium ribbon.

   (iii) Nitrogen combines with hydrogen gas to form ammonia.

   (iv) Hydrogen sulphide gas burns in air to give water and sulpher-dioxide.

6. Give reason of following : (2+2=4)

   (i) Platinum, gold and silver are used to make ornaments.

   (ii) Carbonate and sulphide ores are usually converted into oxide during the process of extraction.

7. (i) What is covalent bond? Write two characteristics of covalent bond.

   (ii) Write IUPAC name of the following : (2+2+2=6)

   (a) $CH_3 - CH_2 - CHO$ (b) $CH_3 - CO - CH_3$

(iii) Explain the formation of foam when hard water is treated with soap.

OR

Write short notes on the following : (2+2+2=6)

(i) Rancidity

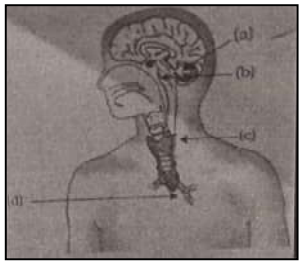
(ii) Redox reaction

(iii) Esterification

SUB-SECTION - 3

8. Explain the difference between biodegradable and non biodegradable substances. Give an example. (2+2=4)

9. Label the endocrine glands in the following diagram : (1+1+1+1=4)



10. Read the following passage and answer the questions :

Its explanation lies in the fact that all human chromosomes are not completely paired. Most of the chromosomes in human are copies of the maternal and paternal chromosomes. Their number is 22 pairs. But there is a pair called sex chromosomes which are not in complete pair. In female chromosomes are in complete pair and both are called X but in male this pair is not complete. In which one X chromosome is of normal size and the other chromosome is smaller which is called Y chromosome. So in female, there are XX and in male, there are XY chromosomes. Can we now find out the hereditary pattern of X and Y chromosome?

(i) How can sex determination hereditary?

(ii) How does sex determination occur in human child? (2+2=4)

11. Draw the structure of human alimentary canal and label the following parts of it -

Mouth, Oesophagus, Stomach and Intestine. (4+2=6)

OR

Make a neat and labelled diagram of the pistil and show the growth of the pollen tube and its entry into the ovule. (6)