High School Examination (Main) - 2024

Subject : Science

Class – X

Time : 3 hours **Maximum Marks: 75**

Instructions:

(i) All questions are compulsory.
(ii) Question Nos. 1 to 5 are 30 objective type questions. Each question carries 1 (one) marks.
(iii) Internal options are given in question nos. 6 to 23.
(iv) Marks of each question are indicated against it.
(v) Answer question nos. 6 to 17 in about 30 words each.
(vi) Answer question nos. 18 to 20 in about 75 words each.
(vii) Answer questions nos. 21 to 23 in about 120 words each.
(viii) Draw neat and clean labelled diagram wherever required.

1. Choose and write the correct alternative : $1 \times 6 = 6$

(i) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + Fe$

The above reaction is an example of a

(a) Combination reaction (b) Double displacement reaction
(c) Decomposition reaction (d) Displacement reaction

(ii) Which one of the following types of medicines is used for treating indigestion?

(a) Antibiotic (b) Analgesic
(c) Antacid (d) Antiseptic

(iii) Which of the following methods is suitable for preventing an iron frying pan form rusting?

(a) Applying grease (b) Applying paint
(c) Applying coating of zinc (d) Applying coating of cromium

(iv) Butanone is a four carbon compound with the functional group –

(a) Carboxylic acid (b) Aldehyde
(c) Ketone (d) Alcohol

(v) The breakdown of pyruvate to give carbon dioxide, water and energy, this reaction take place in

(a) Cytoplasm (b) Mitochondria
(c) Chloroplast (d) Nucleus

(vi) The gap between two neurons is called

(a) Dendrite (b) Synapse
(c) Axon (d) Impulse

2. Fill in the blanks : 1 × 6 = 6

(i) The disposal of the waste we generate is causing serious _____ problems.

(ii) The least distance of distinct vision for a young adult with normal vision is about _____.

(iii) Scattering of light cause the _____ colour of sky.

(iv) The S.I. Unit of electric power is _____.

(v) The potential difference is measured by means of an instrument called _____ .

(vi) At the time of short circuit, the current in the circuit _____ .

3. Write True/False: 1 × 6 = 6

(i) Two magnetic field lines intersect each other.

(ii) Chlorofluorocarbons is used as fire extinguisher.

(iii) Substances that are broken down by biological processes are said to be non–biodegradable.

(iv) Full form of D.N.A. is Deoxyribose Nucleic Acid.

(v) Hydra can be cut into many piece grow into a complete organism. This is known as regeneration.

(vi) Energy is absorbed in exothermic chemical reaction.

4. Match the column : 1 × 6 = 6

	"A"		**"B"**
(i)	Marble	(a)	Liquid non–metal
(ii)	Vinegar	(b)	C_6H_6
(iii)	Bromine	(c)	$CaCO_3$
(iv)	Benzene	(d)	Acetic acid
(v)	Pair of sex chromosomes	(e)	Regulates blood sugar level
(vi)	Insulin	(f)	XX
		(g)	XY

5. Write the answers in one word/sentence each: 1 × 6 = 6

(i) What is the blood pressure?

(ii) Write the name of plant hormones which help in the growth of the stem.

(iii) Who worked out the main rules of such inheritance?

(iv) Danger Signal light are red in colour, why?

(v) Write the commercial unit of electrical energy.

(vi) Write the full form of M.R.I.

6. Why should curd and sour substance not be kept in brass and copper vessels? 2

OR

When does acid rain occur? Write reason and its effects.

7. Which types of acid found in following natural source? 2

(i) Lemon

(ii) Ant sting

OR

Write any two uses of Banking Soda.

8. Draw the electron dot structure of ethane. 2

OR

Draw the electron dot structure of methane.

9. What is denatured alcohol? Write? 2

OR

How to use alcohol as a fuel? Write.

10. Define life processes. 2

OR

Write the chemical reaction of photosynthesis.

11. Why is vegetative propagation practice for growing types of plants? Write reason. 2

OR

Write definition of tissue culture technique.

12. How does the embryo get nourishment inside the mother's body? Write. 2

OR

What is menstruation and how many days usually lasts in menstruation? Write.

13. How is the sex of the child determined in human beings? (Draw only liner diagram) 2

OR

Draw the liner diagram of first generation or F_1 progeny of inheritance.

14. Write laws of reflection of light. 2

OR

Define the following:

(i) Centre of curvature

(ii) Focal length

15. The refractive index of diamond is 2.42. What is the meaning of this statement? Write. 2

OR

Define 1 dioptre of power of a lens.

16. Why does the sky appear dark instead of blue to an astronaut? Write reason. 2

OR

Write reason why the planets do not twinkle.

17. Draw the symbols of following components used in circuit diagrams: 1 + 1 = 2

(i) An electric cell

(ii) Rheostat

OR

On what factors does the resistance of a conductor depend? (write any two factors)

18. Given an example of a metal which. 1 + 1 + 1 = 3

(i) is a liquid at room temperature.

(ii) can be easily cut with a knife.

(iii) is the best conductor of heat.

OR

Define the following terms:

(i) Mineral

(ii) Ore

(iii) Gangue

19. Draw the structure of neuron and write any two names of organelles of any cell. 1 + 2 = 3

OR

Draw the structures of reflex arc and write any two names of part.

20. Write the right hand thumb (Maxwell's corkscrew) rule with ray diagram. 1 + 2 = 3

OR

Write the Fleming's left hand rule with ray diagram.

21. Write the type of following chemical reactions: 1 + 1 + 1 + 1=4

(i) $2FeSO_4(s) \xrightarrow{Heat} Fe_2O_{3(S)} + SO_{2(g)} + SO_{3(g)}$

(ii) $CaO(s) + H_2O(\ell) \rightarrow Ca(OH)_2(aq) + Heat$

(iii) $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

(iv) $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NcCl(aq)$

OR

(i) When sodium sulphate react with barium chloride, what is the name of this type reaction and write its chemical reaction.

(ii) Which type of product produce, when calcium oxide reacts with water? Write its chemical reaction.

22. Draw labelled diagram of open and closed stomatal pore. 2 + 2 = 4

OR

Draw a labelled diagram of excretory system in human beings.

23. A convex mirror used for rear–view on an automobile has radius of curvature of 3.00 m. If a bus is located at 5.00 m from this mirror, find the position, nature and size of the image. 4

OR

An object, 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.

***** End *****