

DAV BORL PUBLIC SCHOOL, BINA
HALF-YEARLY Examination Session (2024-25)
Practice Paper
Class X SCIENCE

Time Allowed: 3 HOURS.

Maximum Marks: 80

General Instructions:

1. All questions are compulsory
2. Question numbers 1 to 12 are of one mark questions.
3. Question numbers 13 to 14 are of four mark questions based on case study.
4. Question numbers 15 to 24 are three marks questions. These are to be answered in about 50 words each
5. Question numbers 25 to 30 are five marks questions. These are to be answered in about 70 words each.

General Instructions :

1. **All** questions are **compulsory**
 2. Question numbers **1** to **12** are **one mark** questions.
 3. Question numbers **13** to **14** are **three marks** questions.
 4. Question numbers **15** to **24** are **three marks** questions. These are to be answered in about **50 words** each
 5. Question numbers 25 to 30 are **five marks** questions. These are to be answered in about **70 words** each.
1. 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
 2. Gustatory apparatus helps in detection of which of the following. 1
 - i Taste ii Hearing iii Smell iv Sight
 3. A full length image of a distant tall building can definitely be seen by using 1
 - a) a concave mirror

- b) a convex mirror
 c) a plane mirror
 d) both concave as well as plane mirror
4. The functional gap between two neuron is filled with which of the following chemical hormone 1
 i Acetycholine ii Thyroxene iii Serotonin iv Oestrogen
5. Muscle cell are highly contractile because of the presence of which of the following biomolecule 1
 i Glucose , fructose iii Actin ,Myosin
 ii Cutin, fats iv Inulin, suberin
6. The following reaction is an example of a 1
 $4\text{NH}_3 (\text{g}) + 5\text{O}_2 (\text{g}) \rightarrow 4\text{NO} (\text{g}) + 6 \text{H}_2\text{O} (\text{g})$
 1. Displacement reaction 2. Combination reaction
 3. Redox reaction 4. Neutralisation reaction
 a) 1 and 4 b) 2 and 3 c) 1 and 3 d) 3 and 4
7. At noon the sun appears white as 1
 a) light is least scattered
 b) all the colours of the white light are scattered away
 c) blue colour is scattered the most
 d) red colour is scattered the most
8. Which of the following is called the functional unit of Kidney? 1
 i. Neuron ii. Nephron
 iii. Alveoli iv. All of the above
9. **Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:** 1
 (a) Both A and R are true and R is the correct explanation of A.
 (b) Both A and R are true but R is not the correct explanation of A.
 (c) A is true but R is false.
 (d) A is false but R is true.
- Assertion (A) :** In anaerobic respiration, one of the end product is alcohol.
Reason (R) : There is an incomplete breakdown of glucose.
10. **Assertion :** Photosynthesis takes place in green parts of the plants. 1
Reason: Photosynthesis always takes place in leaves.

OR

Assertion : Trachea does not collapse, when there is no air in it.

Reason : Trachea is supported by cartilage.

11. Differentiate between the functional unit of Kidney and lungs by 2 points)
12. Name the organism that shows highest power of regeneration.
13. All living cells need nutrients, O₂, and other essential substances. Also, the waste and harmful substances need to be removed continuously for healthy functioning of cells. So, a well-developed transport system is mandatory for living organisms. Complex organisms have special fluids within their bodies to transport such materials. Blood is the most commonly used body fluid by most of the higher organisms. Lymph also helps in the transport of certain substances. 4
 - i) Which of the following does not exhibit phagocytic activity?
 - (a) Monocytes
 - (b) Neutrophils
 - (c) Basophil
 - (d) Macrophage
 - ii) Why are WBCs called soldiers of the body?
 - (a) They are capable of squeezing out of blood capillaries.
 - (b) They are manufactured in bone marrow.
 - (c) They fight against disease causing germs .
 - (d) They have granular cytoplasm with lobed nucleus.
 - iii) Name the blood cells, whose reduction in number can cause clotting disorder, leading to excessive loss of blood from the body.
 - (a) Erythrocytes
 - (b) Neutrophils
 - (c) Leucocytes
 - (d) Thrombocytes
 - iv) Which of the following is the correct feature of lymph?
 - (a) It is similar to the plasma of blood, but is colourless and contains less proteins.
 - b) It is similar to the WBCs of blood, but is colourless and contain more proteins.
 - (c) It is similar to the RBCs of blood and red in colour.
 - (d) It contains more fats.

14. A compound microscope is an instrument which consists of two lenses L_1 and L_2 . The lens L_1 called objective, forms a real, inverted and magnified image of the given object. This serves as the object for the second lens L_2 ; the eye piece. The eye piece functions like a simple microscope or magnifier. It produces the final image, which is inverted with respect to the original object, enlarged and virtual. 4
- i. What types of lenses must be L_1 and L_2 ?
 - (a) Both concave (b) Both convex
 - (c) L_1 — concave and L_2 - convex (d) L_1 — convex and L_2 - concave
 - ii. What is the value and sign of magnification (according to the new Cartesian sign convention) of the image formed by L_1 ?
 - (a) Value = Less than 1 and Sign = Positive
 - (b) Value = More than 1 and Sign = Positive
 - (c) Value = Less than 1 and Sign = Negative
 - (d) Value = More than 1 and Sign = Negative
 - iii. What is the value and sign of (according to new Cartesian sign convention) magnification of the image formed by L_2 ?
 - (a) Value = Less than 1 and Sign = Positive
 - (b) Value = More than 1 and Sign = Positive
 - (c) Value = Less than 1 and Sign = Negative
 - (d) Value = More than 1 and Sign = Negative
 - iv. If power of the eyepiece (L_2) is 5 diopters and it forms an image at a distance of 80 cm from its optical centre, at what distance should the object be?
 - (a) 12 cm (b) 16 cm (c) 18 cm (d) 20 cm
15. Draw a neat diagram of showing cross section of a dorsiventral leaf and label any four parts correctly. 3
16. Explain briefly reproduction in Amoeba, plasmodium and Rhizopus with the help of diagram only. 3
17. Write down only the procedure and reaction of an experiment that proves that human being exhale CO_2 . 3
18. Explain in brief the steps of Excretion. 3
19. Size of image of an object by a mirror having a focal length of 20 cm is observed to be reduced to $\frac{1}{3}$ rd of its size. At what distance the object has

been placed from the mirror? What is the nature of the image and the mirror?

20. Write the balanced chemical equation for the following reactions and identify the type of reaction in each case. 3

(a) In Thermite reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.

(b) Magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.

(c) Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.

21. (a) When fresh milk is changed into curd will its pH value increase or decrease? Why? 3

(b) What are olfactory indicators? Give an example.

22. Write the preparation and uses of baking soda 3

OR

How plaster of Paris is prepared from gypsum. Write chemical equations.

Write uses of plaster of Paris

23. A person needs a lens of power 5 D for correction of her vision. 3

a) What kind of defect in vision is she suffering from?

b) What is the focal length of the corrective lens?

c) What is the nature of the corrective lens?

24. Describe any three properties of an efficient respiratory surface. 3

25. Curvature of eye lens of human eye can be modified by ciliary muscles to some extent so that its focal length is changed as per requirement. How will the curvature and focal length of eye lens change when (a) a distant object is to be seen and (b) a nearby object is to be seen clearly? Write the reason why a normal eye is not able to see clearly, the objects placed closer than 25 cm, without any strain on the eye. 5

26. a) What is meant by power of a lens and define its SI unit? 5

b) Three friends 'A', 'B' and 'C' have corrective lenses of focal lengths +50 cm, +100 cm and -100 cm respectively. Find the nature and power of each of these lenses.

27. What is decomposition reaction. Explain its different types with one example of each type. Write chemical equations 5

28. a) Mention the pH range within which our body works. Explain how antacids give relief from acidity. Write the name of one such antacid. 5

(b) Fresh milk has a pH of 6. How does the pH will change as it turns to curd? Explain your answer.

(c) A milkman adds a very small amount of baking soda to fresh milk. Why does this milk take a longer time to set as curd?

OR

(d) Mention the nature of toothpastes. How do they prevent tooth decay?

A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y; it gives a compound Z, used for disinfecting drinking water. Identify X, Y, G and Z.

29. a) Draw a well labeled diagram of a reflex action. 5
- b) Explain the steps of digestion of carbohydrates only in your body in a tabular form at various sites/juices starting from your mouth to rectum in a correct order.
30. Write down names of any five endocrine gland that is functional in your body and list down any one hormone secreted by these gland with their specific function too. 5