Class X
Periodic Test-I
(2024-2025)
Science

RIMT WORLD SCHOOL

Date: 20.07.2024 **Roll No: ....**

Time: 1 hr 30 mins **M.M. : 40**

General Instruction:

a) All questions are compulsory.

b) Question number 1 to 8 are very short Answer type questions and carry one mark each

c) Question number 9 to 12 are Short Answer type I questions and carry two marks each.

d) Question number 13 and 14, Short Answer type II questions and carry three marks each.

e) Question number 15 and 16, Case study question and carry four marks each .

f) Question number 17 and 18, Long answer type questions and carry five marks each.

g) Draw neat and well labelled diagram wherever needed.

SECTION-A

1. You are given the solution of lead nitrate. In order to obtain a yellow precipitate you should mix with it a solution of :

a) Potassium chloride b) Potassium nitride

c) Potassium sulphide d) Potassium iodide

2. Which of the following is not an endothermic reaction ?

a) $CaCO_3 \rightarrow CaO + CO_2$

b) $2H_2O \rightarrow 2H_2 + O_2$

c) $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

d) $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

3. A student observed that the colour of pH paper changed to green when she dipped it in water. She added a few drops of concentrated hydrochloric acid to the water. The colour of pH would turn to:

a) Light red b) Apple green

c) Dark blue d) Lemon yellow

4. What are the products obtained by anaerobic respiration in plants?

a) Lactic acid + Energy

b) Carbon dioxide + Water + Energy

c) Ethanol + Carbon dioxide + Energy

d) Pyruvate

5. After testing the eyes of a child, the optician has prescribed the following lenses for his spectacles:

Left eye : + 2.00 D Right eye : + 2.25 D

The child is suffering from the defect of vision called:

a) Short-sightedness b) Long-sightedness

c) Cataract d) Presbyopia

6. As light from a far off star comes down towards the earth:

a) It bends away from the normal

b) It bends towards the normal

c) It does not bend at all

d) It is reflected back

Following questions 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 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.

7. Assertion (A): Carbohydrate digestion mainly takes place in small intestine.
   Reason (R): Pancreatic juice contains the enzyme lactase.
8. Assertion(A): Danger signals are made of red colour
   Reason(R): Velocity of red light in air is maximum, so signals are visible even in dark.(A)

SECTION-B

9. What happens when a zinc strip is dipped into a copper sulphate solution?
   i) Write the equation for the reaction that takes place.
   ii) Name the type of reaction is involved.
10. Give reasons for the following:
    i) Only one half of water molecule is shown in the formula of plaster of Paris.

ii) Sodium hydrogen carbonate is used as an antacid.

11.a) State the role played by the following in the process of digestion :

i) Enzyme trypsin

ii) Enzyme lipase

b) List two functions of finger-like projections present in the small intestine.

12.i)Write about power of accommodation of human eye.

ii) Explain why the image distance in the eye does not change when we change the distance of an object from the eye?

SECTION-C

13.i) What is the colour of ferrous sulphate crystals ? How does this colour change after heating ?

ii) Name the product formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change ?

OR

i)What happens to lime water when CO_2 gas is bubbled through it in excess?

ii)When silver coloured metal (A) is added to dilute sulphuric acid, solution (B) is formed which is colourless solution and a gas (C) is evolved which is colourless. Name 'A', 'B' and 'C' and write the equation.

iii)A green coloured crystalline salt 'A' on heating decomposes to 'B' white substance. When in green salt

solution, a metal (Zinc) is added, its gives rise to colourless solution 'C' with leaving behind 'D' grey metal. Find out A,B,C and D.

14. i) What is the colour of the sunlight:
    a) Scattered by the dust particles in the atmosphere?
    b) Scattered by the air molecules in the atmosphere? Give reason to support your answer.

    ii)State two effects produced by the scattering of light by the atmosphere.

SECTION-D

15. Read the following passage and answer any four questions:

Human digestive system consists of: Alimentary canal and associated glands. The alimentary canal is 9m long tube and associated glands secrets enzyme which helps in the digestion process. The associated glands are Salivary gland, Gastric gland, Pancreas, Liver & Intestinal gland.

i)The enzymes found in intestinal juice finally convert
    a) fats into fatty acids and glycerol
    b) proteins to amino acids
    c) complex carbohydrates into glucose
    d) all of these

ii) The gland which is exocrine as well as endocrine:
    a) Liver b) Salivary gland
    c) Pancreas d) Intestinal gland

iii)Which out of them work in acidic medium:

a) Pancreatic juice b) Gastric juice

c) Salivary amylase d) Intestinal juice

iv) Pick the correct one

a) Salivary amylase = Saliva + HCl

b) Pancreas = Lipase + Trypsin + S.amylase

c) Gastric juice = HCl + Pepsinogen + Renin

d)Gastric juice = HCl + Pepsinogen + Renin+ mucus

v) Mucus

a) It is slimy layer

b)It protects the stomach wall from corroding

c) Forms inner lining of stomach

d) All

16. **Read the following passage and answer any four questions:**

The white solid compound A decomposes quite rapidly on heating in the presence of a black substance X to form a solid compound B and a gas C. When an aqueous solution of compound B is reacted with silver nitrate solution, then a white precipitate of silver chloride is obtained along with potassium nitrate solution. Gas C does not burn itself but helps burn other things.

i) What is compound A ?

ii) What is compound B ?

iii) What is gas C ?

iv) What do you think is the black substance X ? What is its function ?

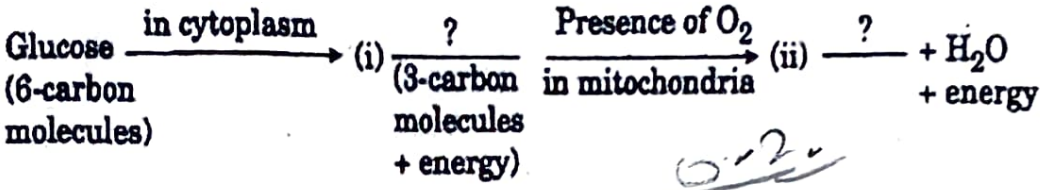
v) What is the general name of substances like X ?

SECTION-E

17. i) In the process of respiration, state the function of alveoli.

ii) Rate of breathing in aquatic organisms is much faster than that in terrestrial organisms. Give reasons.

iii) Complete the following pathway showing the breakdown of glucose.



OR

Give reasons:

i) Ventricles have thicker muscular walls than atria.

ii) Transport system in plants is slow.

iii) Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates.

iv) During the daytime, water and minerals travel faster through xylem as compared to the night.

v) Veins have valves whereas arteries do not.

18.i) What is long-sightedness ? State the two causes of long sightedness (or hypermetropia). With the help of ray diagrams, show :

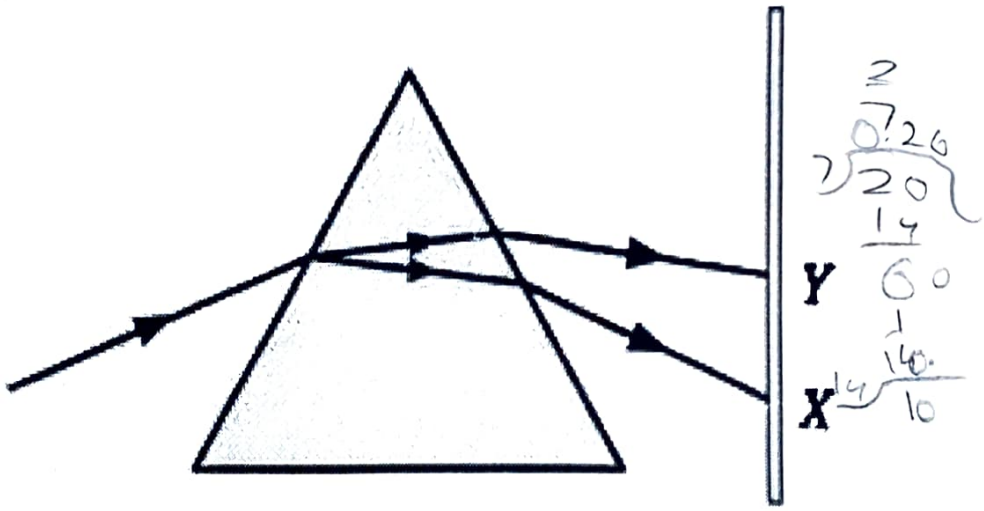
a) The eye-defect long-sightedness.

b) Correction of long-sightedness by using a lens.

ii) An eye has a far point of 2 m. What type of lens in spectacles would be needed to increase the far point to infinity ? Also calculate the power of lens required. Is this eye long-sighted or short-sighted ? $F = \frac{1}{2}$

OR

i) In the figure given alongside, a narrow beam of white light is shown to pass through a triangular glass prism. After passing through the prism, it produces a spectrum YX on the screen.



a) State the colour seen at X and Y.

b) Why do different colours of white light bend through different angles with respect to the incident beam of light ?

ii)Name the process which is involved in the formation of a rainbow.

iii)Why do you not see a spectrum of colours when light passes through a flat pane of glass ?