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FOR PUNJAB CLASS 10 PREPARATION

PSEB 10th Sample Paper 2027 Science

EXAM	YEAR	TYPE	SUBJECT
Punjab Class 10	2027	Sample Paper	Science

CLASS X – SCIENCE (2026-27)

QUESTION PAPER

Maximum Marks: 80. Time: 3 Hour

GENERAL INSTRUCTIONS

Read the following instructions very carefully and strictly follow them:

1. The Question Paper comprises 23 questions. All questions are compulsory.
2. Question No. 1 is an Objective Type Question having 20 sub-parts. All questions are Multiple Choice Questions. Each question carries 1 mark.
3. Questions No. 2 to 13 are Very Short Answer Type Questions. Each question carries 2 marks. Answers should be brief and to the point. Out of 12 questions, 3 questions will have internal choice
4. Questions No. 14 to 20 are Short Answer Type Questions. Each question carries 3 marks. Answers should be clear and appropriately explained. Out of 7 questions, 3 questions will have internal choice.
5. Questions No. 21 to 23 are Long Answer Type Questions. Each question carries 5 marks. Each question will have an internal choice.
6. There is no overall choice.
7. Draw neat and labelled diagrams wherever required

SECTION A

Q1. Choose the correct answer.

20 × 1 = 20 Marks

(i) Which organ pumps blood to all parts of the body?
a) Lungs
b) Heart
c) Kidney
d) Brain

(ii) What is the SI unit of electric current?
a) Volt
b) Ampere
c) Ohm
d) Watt

(iii) What is the chemical formula of quicklime?
a) $CaCO_3$
b) CaO
c) $Ca(OH)_2$
d) Na_2CO_3

(iv) Which part of a plant prepares food?
a) Root
b) Stem
c) Leaf
d) Flower

(v) Which instrument is used to measure electric current?
a) Voltmeter
b) Ammeter
c) Thermometer
d) Barometer

(vi) Which gas is released when a metal reacts with a dilute acid?
a) Oxygen
b) Nitrogen
c) Hydrogen
d) Carbon dioxide

(vii) Which hormone controls blood sugar level in our body?
a) Insulin
b) Thyroxine
c) Adrenaline
d) Estrogen

(viii) What is the SI unit of resistance?
a) Volt
b) Ampere
c) Ohm
d) Watt

(ix) What is the pH of a neutral solution?
a) 2
b) 5
c) 7
d) 12

(x) Which organism reproduces by budding?
a) Amoeba
b) Hydra
c) Human being
d) Paramecium

(xi) Which lens is used to correct myopia?
a) Convex lens
b) Concave lens
c) Plane lens
d) Bifocal lens

(xii) Which metal is liquid at room temperature?
a) Iron
b) Mercury
c) Copper
d) Aluminium

(xiii) What is the basic unit of heredity?
a) Cell
b) Tissue
c) Gene
d) Organ

(xiv) What is the SI unit of electric power?

a) Joule
b) Watt
c) Volt
d) Ohm

(xv) Which functional group is present in ethanoic acid?
a) –OH
b) –CHO
c) –COOH
d) –CO–

(xvi) Which gas is released during photosynthesis?
a) Carbon dioxide
b) Oxygen
c) Nitrogen
d) Hydrogen

(xvii) Which phenomenon causes the splitting of white light into seven colours?
a) Reflection
b) Refraction
c) Dispersion
d) Absorption

(xviii) A solution having pH 3 is:
a) Basic
b) Acidic
c) Neutral
d) Salt solution

(xix) Which process releases energy from food in cells?
a) Photosynthesis
b) Respiration
c) Transpiration
d) Digestion

(xx) Which of the following is a displacement reaction?

a) $CaO + H_2O \rightarrow Ca(OH)_2$
b) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
c) $2H_2 + O_2 \rightarrow 2H_2O$
d) $CaCO_3 \rightarrow CaO + CO_2$

SECTION B
12 × 2 = 24 Marks

Q2. Why do we breathe faster during exercise? [2]

OR

Why are variations useful for living organisms? [2]

Q3. Why is series arrangement not used for domestic circuits? [2]

OR

Why does a compass needle get deflected when brought near a bar magnet? [2]

Q4. Why do ionic compounds have high melting points? [2]

OR

Which metals do not corrode easily? [2]

Q5. How is the small intestine designed to absorb digested food? [2]

Q6. A bulb is connected to a 220 V supply and draws a current of 0.5 A. Calculate its power. [2]

Q7. Why is the pH of soil important for plants? [2]

Q8. Why is oxygen important for our body? [2]

Q9. What happens to the resistance of a wire vary with its area of cross section? [2]

Q10. What happens when zinc reacts with dilute hydrochloric acid? Name the gas produced. [2]

Q11. What happens at synapse between two neurons? [2]

Q12. State Ohm's law and write its formula. [2]

Q13. What is neutralisation? Give one example of a neutralisation reaction. [2]

SECTION C

7 × 3 = 21 Marks

Q14. Explain the role of the following in digestion:

a) Mouth
b) Stomach
c) Small intestine [3]

OR

Explain the three main parts of the human respiratory system and their functions. [3]

15. A doctor has prescribed a corrective lens of power +1.5D. Find the focal length of the lens. Is the prescribed lens diverging or converging?[3]

OR

A ray of light travelling in air enters obliquely into water. Does the light ray bend towards normal or away from normal. [3]

Q16. Write word equations and balance them for the following reactions
(a)Dilute hydrochloric acid reacts with magnesium ribbon.
(b)Dilute sulphuric acid reacts with aluminium powder. [3]
OR
Why does distilled water not conduct electricity whereas rain water does? [3]

Q17. Why is DNA copying an essential part of the process of reproduction? [3]

Q18. Two resistors of resistance 6 Ω and 3 Ω are connected in a circuit.

a) Find the equivalent resistance of the circuit when these are connected in series.
b) Find the equivalent resistance of the circuit when these are connected in parallel. [3]

Q19. Three solutions have pH values 2, 7 and 12.

a) Which solution is acidic?
b) Which solution is neutral?
c) Which solution is basic? [3]

Q20. What is the function of receptors in our body? Think of situations where receptors do not work properly. What problems are likely to arise? [3]

Section - D

3 × 5 = 15 Marks

Q21. Case Study

Every cell in our body needs energy to perform various activities. We obtain food from our diet, but the energy present in food cannot be used directly by the cells. The process of respiration helps the body release energy from food. During aerobic respiration, oxygen taken in through the respiratory system is transported by the blood to different parts of the body. The heart continuously pumps blood throughout the body. In cells, glucose is broken down in the presence of oxygen to release energy, which is stored in the form of ATP **(**Adenosine Triphosphate) and used for various cellular activities.

Answer the following:

a) Which gas is needed by the body to release energy from food? [1]
b) Which organ takes oxygen into the body? [1]
c) Which organ pumps blood to different parts of the body? [1]
d) Name the process by which cells release energy from food. [1]
e) In which form the energy produced is stored in our body. [1]

OR

Answer the following

a) Which male reproductive organ produces sperms and secretes testosterone.
b) Through which tube sperms are transported from testes towards the urethra.

c) Which female reproductive organ produces ova and secretes female sex hormone.
d) Where does fertilization take place in humans?
e) Where does embryo implantation takes place in humans?

Q22. Case Study

A recycling unit uses an electromagnetic crane to lift and move heavy iron objects. When electric current passes through a coil of insulated wire wound around a soft iron core, the core behaves like a magnet and attracts iron objects. When the current is switched off, the magnetic effect largely disappears. The strength of the electromagnet can be increased by increasing the number of turns of the coil or the current flowing through it. The direction of the magnetic field around a current-carrying conductor can be determined using the Right-Hand Thumb Rule.

a) What type of magnet is used in the crane to lift iron objects? **[**1**]**

b) Which material is commonly used as the core of an electromagnet? **[1]**

c) What happens to the magnetic field if the number of turns in the coil is increased? **[1]**

d) Which rule is used to determine the direction of the magnetic field around a straight current-carrying conductor? **[1]**

e) Why does the crane release the iron objects when the electric current is switched off? **[1]**

OR

An object is placed at a distance of 10cm from a convex mirror of focal length of 15cm. Find the position and nature of the image.

Q23. Case Study

Riya observed that many substances used in her daily life, such as cooking gas, petrol, plastics, soaps, detergents and medicines, contain carbon. During a laboratory activity, she studied two compounds, ethanol and ethanoic acid. Ethanol is used in some sanitising products and can undergo oxidation to form ethanoic acid. Ethanoic acid is present in vinegar and gives it its characteristic sour taste. When ethanoic acid reacts with sodium hydrogen carbonate, carbon dioxide gas is released. She also learned that carbon forms a large number of compounds because of its ability to form covalent bonds and to link with other carbon atoms.

Questions:

(a) Name the functional group present in ethanol. **[**1**]**

(b) What is the common name of ethanoic acid? **[**1**]**

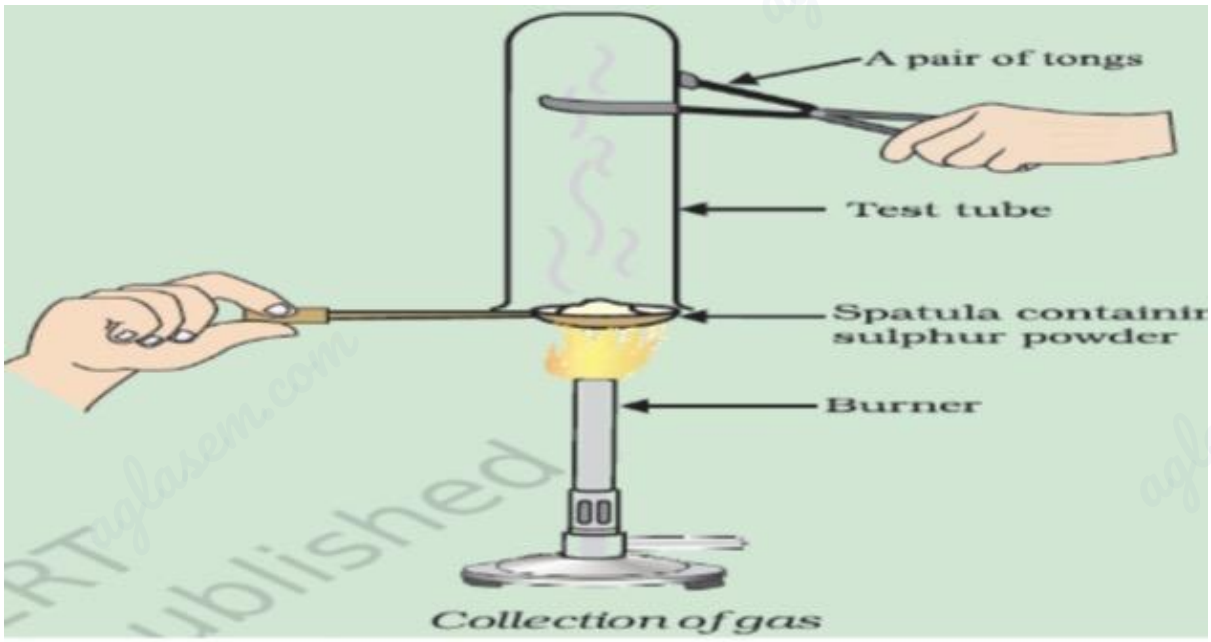
(c) Name the gas evolved when ethanoic acid reacts with sodium hydrogen carbonate. **[1]**

(d) Ethanol undergoes …… to form ethanoic acid.

(e) Why does carbon form a very large number of compounds? [1]

OR

Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it, as shown in figure below.



(a) What will be the action of gas on:

(i) dry litmus paper?

(ii) moist litmus paper? [2]

(b) Write a balanced chemical equation for the reaction taking place. [3]