Time: Maximum Marks: 40

General Instructions:

The Question Paper contains four sections.

Section A contains 8 Multiple choice questions of 1 mark and all the questions are compulsory.

Section B contains case based 16 questions of 1 mark each and all the questions are compulsory.

Section C contains 6 questions of 2 and 3 marks each, under which choices are given.

PART A

Q1. $Pb + CuCl_2 \rightarrow PbCl_2 + Cu$
The above reaction is an example of:
(a) combination (b) double displacement   (c) decomposition   (d) displacement

(a) (ii) & (iii)   (b) (i) & (ii)   (c)(iii) & (iv)   (d) (ii) & (i)

Q2. The mirror having reflection surface curved outward

(a) plane mirror   (b) concave mirror

(c) convex mirror   (d) cylindrical mirror

Q3. What would be the ratio of Oxygen gas to Hydrogen in the given chemical process?

(a)1:2   (b)1:4   (c)2:1   (d)3:1

Q4. The enzymes pepsin and trypsin are secreted respectively by
(a) Stomach and pancreas   (b)Salivary gland and stomach
(c)Liver and pancreas   (d)Liver and salivary gland

Q5. The table given below shows the reaction of a few elements with acids and bases to evolve Hydrogen gas.
Which of these elements form amphoteric oxides?

Element	Acid	Base
A	×	×
B	✓	✓
C	✓	×
D	✓	✓

(a) A and D   (b)B and D   (c)A and C   (d) B and D

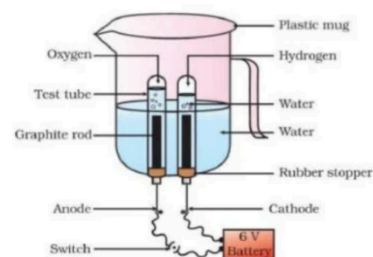Q6. Identify gas A in the following experiment.

(a) Nitrogen   (b) Hydrogen
(c) Oxygen   (d) Carbon dioxide

Q7. Which plant tissue transports water and minerals from the roots to the leaf?
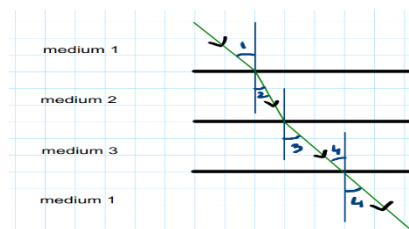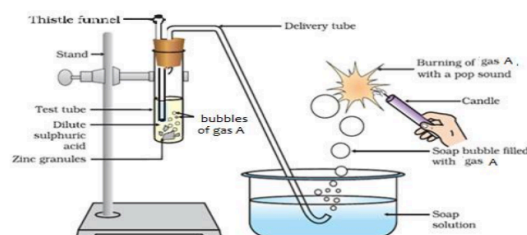(a) Xylem   (b) Phloem

(c) Parenchyma   (d) Collenchyma

Q8. In the above diagram light is travelling through different media. It is noted by a scientist that $\angle 1 = \angle 3 = \angle 4$ but $\angle 2 < \angle 1$. Which of the following statement would be correct?

a)   Medium 1 is the denser than medium 3 but it's density is equal to medium 2.
b)   Medium 2 is the rarest medium.

c) Medium 3 is denser than medium 1.

d) Medium 1 and 3 are essentially the same medium, but medium 2 is denser than 1 and 3.

PART B

Read the given information and answer the following questions: (1 x 4 = 4 M)

CASE- Ionic bonding occurs between elements that have a large difference in electronegativity. In ionic bonding a metal atom with a low electronegativity loses electrons to form a positively charged ion, or cation and a non - metal atom with a high electronegativity gains electrons to form a negatively charged ion or anion. As a result, there is an electrostatic attraction between these ions with results in ionic bonding. These types of compounds are ionic compounds. Q9. The electronic configuration of the three element X, Y and Z are X- 2, 8 Y- 2,8,7 and Z- 2,8 2

Which of the following is correct ?

a) X is a metal   b) Y is a metal   c)Z is a non- metal   d) Y is non- metal and Z is a metal.

Q10. Which of the following properties is not generally exhibited by ionic compounds?

a)- Solubility in water.   b)- Electrical conductivity in solid state.

c)- High melting and boiling points.   d)- Electrical conductivity in molten state.

Q11. which of the following are not ionic compounds?

(i)- KCl,   (ii)- HCl ,   (iii)- CCl4   (iv)- NaCl

a) i& ii   b) ii& iii   c) iii & iv   d) i& iii

Q12. Which of the following statements is incorrect about ionic compounds? a) Ionic compounds are aggregates of oppositely charged ions.

b) Ionic compounds are formed by transfer of electrons.

c) Ionic compounds are formed by sharing of electrons.

d) Ionic compounds are formed between elements having difference in electronegativity.

Read the given information and answer the following questions: (1 x 4 = 4 M)

CASE- Paheli bought a chips packet and opened it. Suddenly her friend Bhoojho came. He started playing and forgot to eat the chips. On the next day, when she ate the chips, she felt the taste was not good and she was not feeling well. She told her mother to take her to a doctor. The doctor told them this is because of eating rancid chips. He gave medicines by which Paheli became well within a few days.

Q13. Which inert gas is used in these packets due to which chips remain fresh for a longer time in a sealed packet?

(a) NO2   (b) CO2   (c) N2   (d) O2

Q14. a) Why do chips remain fresh for a longer time in a sealed packet?

(a) Chips got moistened   (b) Gas of the chips got removed

(c) fat and oil of the chips gets oxidized   (d) None

Q15. $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$, Select the oxidising agent in this equation

(a)Fe   (b)Fe_3O_4 (c)H_2 (d)H_2O

Q16. When Ag is oxidized, it gets a black coating of

(a) $AgNO_3$ (b) Ag_2S (c) Ag_2O (d) Ag_2CO_3

Read the given information and answer the following questions: (1 x 4 = 4 M)

CASE- Rishaan experienced muscular cramps during the training session for his up-coming football match. Mr. Sen, his coach advised him on a schedule of some aerobic exercises to overcome his

problem of muscular cramps. Rishaan followed his coach's advice and did not face the problem of muscular cramps again during his match.

Q17. The proteins and lipids, essential for building the cell membrane, are manufactured by

(a) respiration   (b)digestion   (c) nutrition   (d) excretion

Q18. Anaerobic respiration in muscles often leads to cramps due to

(a) Conversion of pyruvate to ethanol   (b) Conversion of glucose to pyruvate

(c) Conversion of pyruvate to glucose   (d) Conversion of pyruvate to lactic acid

Q19. The respiratory pigment in human beings is:

(a) carotene   (b) chlorophyll   (c) haemoglobin   (d) mitochondria

Q20. In which part of the respiratory system, gaseous exchange takes place?

(a) Alveoli   (b) Pharynx   (c) Larynx   (d) Trachea

Observe the given picture and answer the following questions. (1 x 4 = 4 M)

Figure 10.4

Figure 10.14
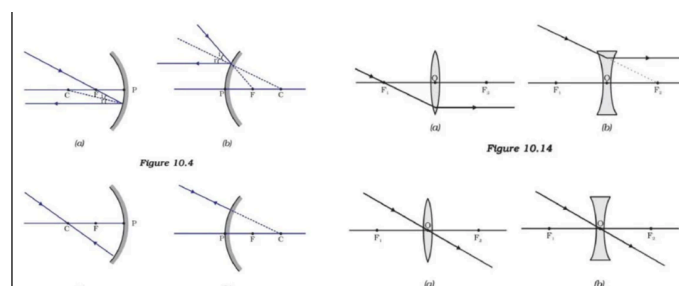
Q21. The phenomena in the case of mirror and lens respectively are

  a) Refraction and Refraction
  b) Reflection and Refraction
  c) Reflection and Reflection
  d) Refraction and Reflection

Q22. Which one of the following is a diverging mirror OR lens?

(i) Concave lens (ii) Convex mirror   (iii) Convex lens   (iv)Concave mirror

 (a) (i) &(iii)   (b) (i) & (ii)   (c)(iii) & (iv)   (d)(ii) & (i)

Q23. Which of the above amongst 2 lens and 2 mirrors, is used at Hair pin bents on ROAD?

 (a)Concave lens   (b) Convex mirror   (c)Convex lens   (d)Concave mirror

Q24. Arjun wants to obtain a sharp image beyond 2F using a convex lens, where the object should be placed?

(a) At infinity   (b) Between F1 and 2F1   (c) At F1   (d) Between F1 and O

PART C

Q25. (a)Show the formation of Na_2O by the transfer of electrons. (1 x 2 = 2M)

(b) Why do ionic compounds have high melting points?

                OR

Give reasons:

(a) Platinum, gold and silver are used to make jewellery.

(b) Sodium, potassium and lithium are stored under oil.

Q26. What are the secretions of gastric glands present in the wall of stomach and also write the function of one of them? (2 M)

                OR

Explain the three events occurs during the process of photosynthesis.

Q27. Write one balanced equation each for the decomposition reactions where energy is supplied in the form of heat, light or electricity. (3M)

                OR

A solution of a substance 'X' is used for white washing.

(i) Name the substance 'X' and write its formula.

(ii) Write the balanced reaction of the substance 'X' named in (i) above with water.

Q28. Bhoojho took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it, as shown in the figure. (1 x 3 =3 M)

(a) What will be the action of gas on a moist litmus paper?

(b) Give reason for the colour change in above question.

(c) Write a balanced chemical equation for the reaction taking place.

OR

Give reasons for the following:

    (a) we apply paint on iron articles

    (b) sodium is kept immersed in kerosene

    (c) respiration considered an exothermic reaction

Q29. A concave lens of focal length 15 cm forms an image 10 cm from the lens. How far is the object placed from the lens? Also find the size and nature of the image. (3)

Q30. Draw a neat and clean diagram of Human excretory system with proper labelling. (3M)

OR

Draw a neat and clean diagram of Human digestive system with proper labelling.