

10th Class Exam 2018 SAMPLE PAPER -3

Time Allowed: 3 hours

Subject: Science

Maximum marks: 80

General Instructions

- (1) Question numbers 1 and 2 in Section-A are one mark question.
- (2) Question numbers 3 to 5 in Section- A are two marks questions.
- (3) Question numbers 6 to 15 in Section-A are three marks questions.
- (4) Question numbers 16 to 21 in Section-A are 5 marks questions.
- (5) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.
- (6) There is no overall choice. However, there is an internal choice in two questions of three marks each and one question of five marks.

Section-A

one mark question

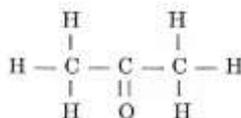
- 1 Balance the following chemical equation : $\text{Fe (s) + H}_2\text{O (g) } \rightarrow \text{Fe}_3\text{O}_4 \text{ (s) + H}_2 \text{ (g)}$
- 2 Why is respiration considered an exothermic process ?

Two marks question

- 3 Write the chemical formula for washing soda. How may it be obtained from baking soda ? Name an industrial use of washing soda other than washing clothes.
- 4 Give an example of a decomposition reaction. Describe an activity to illustrate such a reaction by heating.
- 5 Draw ray diagrams to represent the nature, position and relative size of the image formed by a convex lens for the object placed : (a) at $2F_1$. (b) between F_1 and the optical centre O of lens.

Three marks question

- 6 (a) Why are covalent compounds generally poor conductors of electricity ?
(b) Name the following compound :
(c) Name the gas evolved when ethanoic acid is added to sodium carbonate. How would you prove the presence of this gas?



- 7 (a) What are amphoteric oxides ?
Choose the amphoteric oxides from amongst the following oxides : Na_2O , ZnO , Al_2O_3 , CO_2 ; H_2O
(b) Why is it that non-metals do not displace hydrogen from dilute acids ?
- 8 Two lamps, one rated 60 W at 220 V and the other 40 W at 220 V, are connected in parallel to the electric supply at 220 V. (a) Draw a circuit diagram to show the connections: (b) Calculate the current drawn from the electric supply. (c) Calculate the total energy consumed by the two lamps together when they operate for one hour.

- OR,
- (a) Distinguish between the terms 'overloading' and 'short-circuiting' as used in domestic circuits.
(b) Why are the coils of electric toasters made of an alloy rather than a pure metal ?
 - 9 How are oxygen and carbon dioxide transported in human beings ? How are lungs designed to maximize the area for exchange of gases ?

- 10 (a) Name two different ways in which glucose is oxidised to provide energy in various organisms. (b) Write any two differences between the two ways of oxidation of glucose in organisms.
- 11 How is ozone formed in the upper atmosphere ? Why is damage to ozone layer a cause of concern to us ? What causes this damage ?
- 12 Some esters are added to food items for special smells. An ester can be obtained from ethanol and ethanoic acid.
- (i) Name the ester which is obtained due to the chemical reaction between ethanol and ethanoic acid in presence of concentrated sulphuric acid and write the chemical equation.
- (ii) Name the process.
- 13 Rosa's pet dog died and she started crying and was inconsolable. She did not allow 3 her family members to bury it. Her science teacher happened to visit and reminded her that her dog will still be useful after burying if she could grow rose plants in that place :
- (a) Do you agree with what the teacher said ? Why ?
- (b) What happens to the dead animals which are buried ?
- (c) Name any one decomposer.
- (d) How is Rosa's teacher commendable in handling the situation ?(VBQ)
- 14 Calculate the resistivity of the material of a wire of length 1m, radius 0.01 cm and of resistance 20 ohms.
- 15 15. Find the direction of magnetic field due to a current carrying circular coil held :
- (i) Vertically in North - South plane and an observer looking it from east sees the current to flow in anticlockwise direction.
- (ii) Vertically in East - West plane and an observer looking it from south sees the current to flow in anticlockwise direction.
- (iii) Horizontally and an observer looking at it from below sees current to flow in clockwise direction.
- OR, In Faraday's experiment if instead of moving the magnet towards the coil we move the coil towards the magnet. Will there be any induced current? Justify your answer. Compare the two cases.
- Five marks question**
- 16 (a) What is meant by dispersion of white light ? Describe the formation of rainbow in the sky with the help of a diagram. (b) What is hypermetropia ?
- Draw ray diagrams to show the image formation of an object by : (i) Hypermetropic eye (ii) Correction made with a suitable lens for hypermetropic eye.
- OR (a) Give reasons for the following : (i) Colour of the clear sky is blue. (ii) The sun can be 'seen about two minutes before actual sunrise. (iii) We cannot see an object clearly if it is placed very close to the eyes. (b) What is Presbyopia ? Write two causes of this defect.
- 17 (a) Why do we classify elements ?
- (b) What were the two criteria used by Mendeleev in creating his Periodic Table ?
- (c) Why did Mendeleev leave some gaps in his Periodic Table ?
- (d). In Mendeleev's Periodic Table, why was there no mention of Noble 'gases like Helium, Neon and Argon?
- (e) Would you place the two isotopes of chlorine, C1-35 and Cl-37 in different slots because of their different atomic masses or in the same slot because their chemical properties are the same? Justify your answer.
- 18 (a) Draw the structure of a neuron and label the following on it : Nucleus, Dendrite, Cell body and Axon

(b) Name the part of neuron : (i) where information is acquired. (ii) through which information travels as an electrical impulse.

19 An element X(atomic no. 11) reacts with an element Y (atomic no. 17) to form a monovalent halide.

(a) Identify the position of X and Y in group and period in the periodic table.

(b) State whether these elements are metal or non-metal ?

(c) Describe nature of oxide of element X. Draw electron dot structure of the halide.

20 (a) What is (i) phototropism and (ii) geotropism ? With labelled diagrams describe an activity to show that light and gravity change the direction that plant parts grow in. (b) Mention the role of each of the following plant hormones : (i) Auxin (ii) Abscisic acid

21 Give reasons for the following :

(a) Urethra is called a common exit point. (b) Testes are located outside the abdominal cavity.

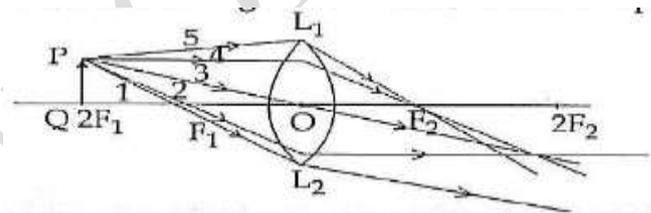
(c) Prostrate gland and seminal vesicles are important for male reproductive system.

(d) Placenta is a necessary connection between the fetus and the mother.

(e) Menstruation takes place when the egg is not fertilized.

Section- B (Two marks question)

22 In the following diagram some rays coming from an object P incident to a convex lens L_1L_2 . The paths of rays are shown. Select the two rays which are obeying the rules of refraction through convex lens.

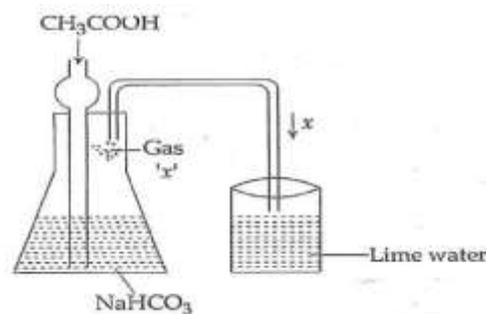


Locate the position and size of image.

23 In the experimental set up shown below the gas 'x' evolved is passed through lime water.

(i) Name the gas 'x' evolved. What change do you observe in the lime water ? Write the chemical equation.

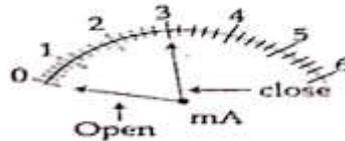
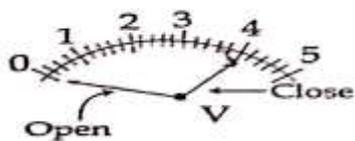
24. In an experiment of image formation of an object when placed at centre of curvature in front of a convex lens, draw a ray diagram for image formation. Write the 'nature' of the image formed.



25 In an experiment to prepare temporary mount of a leaf peel, staining of leaf peel is done before putting a drop of glycerine. Explain why ?

26 performing an experiment a student observes that when he heat some green crystals in a boiling tube, the colour of the crystals changes to brown and a gas evolves which smells like burning sulphur , Interpret the observations and results.

27 To study the dependence of potential difference (V) on current (I) flowing across a resistor, a student takes readings through voltmeter and ammeter when key is open and closed respectively.



(i) Find the correct reading of voltmeter, (ii) Find the correct reading of ammeter.