**QUESTION BANK- I**
**CLASS X**
**SCIENCE**

Q1. The formula of oxides of two elements X and Y are XO and $Y_2O_3$, respectively.

(a) Find the valency of X and Y.

(b) Identify the groups in which they would be placed in the modern periodic table.

(c) Name one more element belonging to each of these groups.

Q2. What do you understand by the following terms:

(a) Phenotype, (b) Genotype, (c) Dominant traits, (d) Recessive traits, (e) Genes

Q3. What is catalytic hydrogenation? How is it carried out? Give the balanced chemical equation of the reaction involved?

Q4. Complete the following reaction and balance them:

(a) $Cu + AgNO_3 \longrightarrow$

(b) $CuO + C \longrightarrow$

(c) $MnO_2 + Al \longrightarrow$

Q5. What is cinnabar? How is metal extracted from cinnabar? Explain briefly. How is the extracted metal being purified?

Q6. Out of the two elements A and B with mass no. 2 and 235 respectively, which one is suitable for making (a) a nuclear reactor (b) hydrogen bomb
Name the type of nuclear reaction involved in each of the case.

Q6. (a) what is gestation period?

(b) What is DNA?

(c) State three contraceptive methods for birth control population

Q7. Explain with the help of an example for each, how the following provides evidence in favour of evolution in organisms. (a) Homologous organs (b) Analogous organs, (c) Fossils

Q8. A convex lens can form a magnified erect as well as inverted image of an object placed in front of it. Draw a ray diagram to justify this statement stating the position of the object with respect to lens in each case. An object of height 4cm is placed at a distance of 20 cm from a concave lens of focal length 10cm. Use lens formula to determine the position of image.

Q8. Draw a schematic diagram of a circuit of a battery of 4 cells of 2V each connected to a key, an ammeter and two resistors of 2ohm and 3 ohm respectively in series and avoltmeter to measure the potential difference of 3 ohm.

Q9. Explain why a ray of light passing through the centre of curvature of a concave mirror, get s reflected along the same path.

Q10. How will you differentiate between saturated and unsaturated hydrocarbons on the basis of combustion?

Q11. How are the following conversions done :

(a) Methane to chloromethane

(b) Ethyne to ethane

(c) Ethane to ethanol

Q12. What are the causes of short circuit? Give any two uses of electric fuse.

Q13. What is pollination? Explain its significance. Explain the process of fertilisation in flowers.

Q14. An electric geyser consumes 2.2 units of electrical energy per hour of use at 220V. what is the power rate of device? What is current flowing through this device when it is connected across the mains?

Q15. Draw the diagram of neuron and label its parts. Which part of neuron acquires the information? Through which part information travels? In what form information travels?

Q16. Give reasons:

(a) Elemental carbon forms compound mainly by covalent bonding.

(b) Diamond has high melting point.

(c) Acetylene buns with sooty flame.

(d) Kerosene does not decolourise bromine water whereas cooking oil does

Q17. What is spectrum? How can we recombine the components of white light after a glass prism has separated them? Illustrate by drawing a diagram.

Q18. Draw a labelled diagram of human excretory and also list its functions.

Q19. How does atomic size, metallic character and valency vary on moving left to right, and up to down in modern periodic table.

Q20. A metal nitrate A on heating gives yellow brown metal oxide along with gas B and colourless gas C. Metal present is A is used in alloy which is used for soldering purposes. Aqueous solution of A on reaction with potassium iodide form a yellow precipitate of compound D. Identify A, B, C, D. Also identify the types of reaction.

Q21. Explain the need of chemical communication in multicellular organisms.

Q22. Name the hormone which is released into blood sugar when its sugar level rises. Name the organ which produces this hormone and its effects on blood sugar level. Also mention the digestive enzyme secreted by this organ with one function of each.

Q23. A 4cm. tall object is placed perpendicular to the principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 15 cm. Find the nature, position and size of the image.

Q24. Write difference between AC and DC.

Q25. An element 'X' is placed in the $3^{rd}$ group and $3^{rd}$ period of modern periodic table. Answer the following questions with reason:

(a) Write the electronic configuration of the element 'X'.

(b) Write the formula of the compound formed when the element 'X' reacts with another element 'Y' of atomic number 17.

(c) Will the oxide of this element be acidic or basic?

(d) State modern periodic law

(e) Will it be metal, non-metal, or metalloid?

**Assignments**

**Chapter wise questions of physics**

**Light –Reflection and Refraction**

1. What is the magnification of a plane mirror?
2. What is the radius of curvature of plane mirror?
3. Why paper catches fire when a convex lens is used to focus sunlight?
4. What is silvering of mirror?
5. What is refractive mirror?
6. State the formula, lens formula and power of lens
7. The refractive index of water is 1.33 and kerosene is 1.44. Calculate refractive index of the

kerosene with respect to water.

8. What kind of mirrors are used in big shopping stores to watch activities of customers?
9. Give mirror image of word ï¿½AMBULANCEï¿½
10. The magnification produced by a plane mirror is +1. What does it mean?

**MAGNETIC EFFECTS OF ELECTRIC CURRENT**

1. The MCB of a Rupa's room is tripped and keeps on tripping again and again. If it is a domestic

circuit, what could be the reason of this phenomenon?

2. State any three appliances that function on Fleming's left hand rule.
3. What is the need to convert Dynamo into alternating current?
4. Find the applications of solenoid.
5. Difference between short circuiting and overloading.
6. Show an activity to demonstrate the direction of the magnetic field generated around a current carrying conductor.
7. What is a fuse? What material is used for make fuse wire?
8. State the properties of magnetic lines of force.

9. Name two safety measures commonly used in electric circuits and appliances.

10. What is the direction of magnetic field in bar magnet?

## HUMAN EYE AND COLORFUL WORLD

1. What is a diameter of human eye?

2. What is the function of crystalline lens of human eye?

3. In which type of eye defect far point of the eye gets reduced?

4. Why do birds fly back to their nest in the evening?

5. Why do you take time to find object when you enter in dim lighted room from outside in the sun?

6. Why does ray of light splits when passed from prism?

7. Why doesnï¿½t planet appear to be twinkling?

8. Why we canï¿½t see things very close to our eyes?

9. When we see any object through the hot air over the fire, it appears to be wavy, moving slightly. Explain.

10. Why does sky appear blue on a clear day?

## Electricity

1. What is the difference between a conductor and an insulator?

2. What is the difference between open and closed circuits? Draw diagrams for both.

3. Define parallel connection and series connection.

4. What are the disadvantages of heating effect of current?

5. What are the advantages of heating effect of current?

6. What is electric current?

7. What is potential difference? Give its unit with definition.

8. Find the expression for calculating heat.

9. A wire is 1m long, 0.2mm in diameter and has resistance of 10Ω. Calculate its resistivity.

10. Calculate the area of cross section of a wire of length 2m, its resistance is 25Ω and the Resistivity of material of wire is 1.84*10 - 6 Ωm.

11. Calculate the energy consumed by 120W toaster in 20 minutes.

12. What is resistance of conductors? Name two metals which are highly resistant.

13. Why is tungsten metal used in bulbs but not in fuse wires?

14. Define the terms Watt and Volt.

Chemistry Class X- Chapter wise Question

Chapter 1- Chemical Reactions and Equation

1. What is a redox reaction?
2. What is corrosion? Explain its advantage and disadvantage.
3. What is rancidity? How can we reduce the problem of rancidity?
4. What is meant by endothermic and exothermic reactions? Give suitable example for each.
5. Define different types of chemical reaction and give examples for each.
6. Why is photosynthesis considered as an endothermic reaction?
7. In electrolysis of water, why is the volume of gas collected over one electrode double that of the other electrode?
8. What happens when water is added to solid calcium oxide taken in a container? Write a chemical formula for the same.
9. Give three types of decomposition reaction.
10. Name the compound used for testing $CO^2$ gas.

Chapter2- Acids, Bases and salts

1. Why is Plaster of Paris stored in a moisture proof container?
2. What do you mean by neutralization reaction? Give two examples.
3. Mention two uses of baking soda and washing soda.
4. Why does a milkman add a small amount of baking soda to fresh milk to shift the pH of fresh milk from 6 to slightly alkaline?
5. Why do acids not show acidic behavior in the absence of water?
6. Rain water conducts electricity but distilled water does not. Why?
7. Why don't we keep sour substances in brass and copper vessels?
8. What is the common name of CaOCl2?
9. Name the compound used for softening hard water.
10. What happens when baking soda is heated?
11. Give the properties and uses of bleaching powder.

Chapter 3- Metals and Non Metals

1. A metal 'X' loses two electrons and a non-metal 'Y' gains one electron. Show the electron dot structure of compound formed between them. Is ionic or covalent? Does it have high melting point or low? Will it conduct electricity in solid state or in aqueous solution and why? Will it be soluble in water?
2. A student was given Mn, Zn, Fe and Cu metals. Identify which of them
   (a) will not displace H2 from dil. HCl.
   (b) will react only with steam to give H2(g).
   (c) Will give H2 with 5% HNO3.

Write the chemical reactions involved.

3. Compound X and aluminium are used to join railway tracks.
   (a) Identify the compound X.
   (b) Name the reaction.
   (c) Write down its reaction.

4. A metal A, which is used in thermite process, when heated with oxygen gives an oxide B, which is
amphoteric in nature? Identify A and B. Write down the reactions of oxide B with HC1 and NaOH.

5. A non-metal A is an important constituent of our food and forms two oxides B and C. Oxide B is
toxic whereas C causes global warming.
(a) Identify A, B and C.

Chapter 4- Carbon and Compounds

1. Why covalent compounds have low melting and boiling points?
2. Give two properties of ethanol.
3. Define catalyst.
4. Name the peculiar/specific chemical property exclusive in case of saturated hydrocarbons and unsaturated hydrocarbons.
5. Why does carbon forms large number of compounds?
6. Write the structural formula for bromopentane and ethanoic acid.
7. How does ethanoic acid react with carbonates and hydrogen carbonates? Show it with the equation.
8. Draw the structures of two isomers of butane.
9. Differentiate between saturated and unsaturated hydrocarbons. Give one example for each.
10. What is denatured alcohol?
11. What is esterification and give its uses?
12. Give difference between soap and detergent.

Chapter5- Periodic classification of elements

1.How and why does the atomic size vary as you go :
(i) from left to right across a period? (ii) down a group?

2. How will the tendency to gain electrons change as we go from left to right across a period?

3. How does electronic configuration of atoms change in a period with increase in atomic number?

4. Why was the system of classification of elements into triads not found suitable?

5. Why could no fixed position be given to hydrogen in Mendeleev's Periodic Table?
6. What are 'groups' and 'periods' in the periodic table?
7. Three elements A,B and C with similar properties have atomic masses X,Y and Z respectively. The mass of Y is approximately equal to the average mass of X and Z. What is such an arrangement of elements called? Give one example of such a set of elements.
8. Elements have been arranged in the following sequence on the basis of their increasing atomic masses. F, Na, Mg, Al, Si, P, S, Cl, Ar, K
(a) Pick two sets of elements which have similar properties.
(b) The given sequence represents which law of classification of elements?
9. Two elements M and N belong to groups I and II respectively and are in the same period of
the periodic table. How do the following properties of M and N vary?
(i) Sizes of their atoms (ii) Their metallic characters
(iii) Their valencies in forming oxides (iv) Molecular formulae of their chlorides
10. An element X belongs to group 17 and third period of the periodic table.
(a) Write electronic configuration of the element. What is its valency?
(b) Predict its nature, whether it is a metal or non-metal.
(c) Give the formula of the compound formed when it combines with an element Y having valency three.

Ch..Life process

Q.1: GI've function of...ptyalin, pepsin and lipase.

Q.2: Define emulsification &its importance.

Q.3: Explain the process of ascent of sap in plants.

Q.4: Draw labelled diagram of stomata, human excretory system, nephron and neuron.

Q.5: Explain light & dark reaction of photosynthesis.

Ch...Control and coordination

Q6. : Give function of forebrain and hindbrain.

Q.7: Name the hormones secreted from ovary, pancreas, thyroid and adrenal glands. Also mention their function.

Q.8. Give function of auxin and Giberellin in plants

Q9. Explain process of phototropism and Geotropism in plants with the help of diagrams.

Q10. Draw a labelled diagram to show the pathway of reflex arc.

Ch...How do organusms reproduce.

Q 11. Explain asexual mode of reproduction in amoeba, hydra and fungi.

Q.12. Give function of fallopian tube, ovary and seminal vesicles in humans.

Q.13: Draw a sectional view of a flower with complete labelling.

Q.14: Define contraceptive with example.

Q.15: Name two bacterial and two viral STDs.