PHYSICS IMPORTANT QUESTIONS

2 MARKS QUESTIONS

1. HEAT

1. Why do we get dew on the surface of a cold soft drink bottle kept in open air?(Q.no-3)
2. If you are chilly outside the shower stall, why do you feel warm after the bath if you stay in bathroom? (Q.no-19)
3. What happens to the water when wet clothes dry? (Page 18) (Q.no-10)
4. Equal amounts of water are kept in a cap and in a dish. Which will evaporate faster? Why? (Q.no-11)
5. What role does specific heat capacity play in a watermelon to keep it cool for long time after removing it from a fridge on a hot day? (Q.no-18)
6. Your friend is not able to differentiate between evaporation and boiling. What questions do you ask to make him know the differences between evaporation and boiling? (Q.no-9)

   (Or)

   Navya is confused about the differences between evaporation and boiling. The teacher clarified the differences by asking some questions to Navya. What questions may ask by Navya's Teacher? (Q.no-9)
7. We use the Pots in the summer season. Why does the water kept in a pot remain cool?
8. Why dies it is easy to drink a coffee in a saucer than in a cup?
9. One day Samantha eats samosa. She observed the curry inside the samosa hot but the samosa is cold. What questions may raise in her mind? (See page 8, 3rd point)

3. REFLECTION OF LIGHT BY DIFFERENT SURFACES

10. By observing steel vessels and different images in them; Surya, a third class student asked some questions his elder sister Vidya. What may be those questions? (Q.no-12)
11. An object 4cm in size is placed at 25cm in front of a concave mirror of focal length 15cm. At what distance from the mirror would a screen be placed in order to obtain a sharp image? Find the nature and the size of the image. (See Page Page-64 Example Sum)
12. Which instruments is used to see bunkers? Why it is made up of Z-shape?
13. Parallel rays are coming from distant object falls on a concave mirror. Where does they meet after reflection and what is the nature of the image? (See Page-59, Fig-29)
14. Why concave and convex mirrors are called spherical mirrors?
15. State the differences between convex and concave mirrors. (Q.no-4)
16. Why do we prefer a convex mirror as a rear-view mirror in the vehicles? (Q.no-29)

5. REFRACTION OF LIGHT AT PLANE SURFACES

17. Collect information on working of optical fibers. Prepare a report about various uses of optical fibres in our daily life. (Q.no-14)
18. What is the reason behind the shining of diamond and how do you appreciate it? (Q.no-18)
19. Why do stars appear twinkling? (Q.no-26)
20. Why does a diamond shine more than a glass piece cut to the same shape?(Q.no-27)

6. REFRACTION OF LIGHT AT CURVED SURFACES

21. Collect the information about lenses used by Galileo in his telescope? (Q.no-15)
22. Find the refractive index of the glass which is a symmetrical convergent lens if its focal length is equal to the radius of curvature of its surface. (AS7) (Ans: 1.5) (Q.no-23)

23. Osama bin Laden has taken two lenses with focal lengths f_1 and f_2 respectively. His friend Obhama asked him to find out the focal length.
    i. Two lenses are touching each other.
    ii. They are separated by a distance'd' with common principle axis.
    iii. How do you find focal length of the lenses experimentally?(Q.no-13)

    (Or)

    Let us assume a system that consists of two lenses with focal length f_1 and f_2 respectively. How do you find the focal length of the system experimentally, when
    i) Two lenses are touching each other
    ii) They are separated by a distance'd' with common principal axis. (Q.no-13)

24. An object is placed at a distance 20 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image? (See Page132, 3rd Model)
25. A transparent sphere of radius R and refractive index n is kept in air. At what distance from the surface of the sphere should a point object be placed on the principal axis so as to form a real image at the same distance from the second surface of the sphere?(SeePage-118)
26. Draw the ray diagram of formation of an image by using the convex lens, when the object is placed beyond the centre of curvature? (Page-123, Fig-13)

7. HUMAN EYE AND COLOURFUL WORLD

27. Prisms are used in binoculars. Collect information why prisms are used in binoculars. (Q.no-12)
28. Expalin briefly the reason for the blue of the sky? (See Page-5)
29. Why does the sky sometimes appear white? (Q.no-17)
30. An old man was unable to see closer object and distanict object. Which type of eye defect he suffers from? How can you correct it? (See Page -144)
31. Suresh wear a sceptical and his eyes observed to be bigger in size. (See Page -142)
    i). What is the lens used by him?
    ii). What type of eye defect he is? Draw the ray diagram?

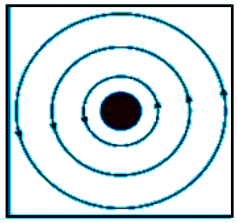
11. ELECTRICITY

32. Derive $R = \rho\frac{l}{A}$ (Q.no-6)
33. Why did we use fuses in household circuits? (Q.no-11)
34. Why should we connect the electric appliances in parallel to household circuit? What happens if they are connected in series? (Q.no-20)
35. How can you appreciate the role of a small fuse in house wiring circuit in preventing damage to various electrical appliances connected to the circuit? (Q.no-25)
36. A car head light uses 40W when it release lesser light and uses 50W when it releases more light. In which case the resistance is more ? Explain? (See Q.no-15 Model)
37. What are ohmic and non-ohmic conductors? Give some examples for them? (See Page-238)
38. During the rainy season the power supply to our home from the electrical pole will interrupted. Why? How do you restore the current? (See Page-41, 2nd Para)
39. What happens to our body if we touches a current wire of 240V? (See Page-239)

12. ELECTROMAGNETISM

40. Symbol 'X' indicates the direction of a magnetic field into the page. A straight long wire carrying current along its length is kept perpendicular to the magnetic field. What is the magnitude of force experienced by the wire by the magnetic field? In what direction does it act? (Q.no-7)

41. How do you appreciate the relation between magnetic field and electricity that changed the lifestyle of mankind? (Q.no-27)
42. Give a few applications of faraday's law of induction in daily life. (Q.no-28)
43. See figure, magnetic lines are shown. In what direction does the current through wire flow? (Q.no-2)



PHYSICS IMPORTANT QUESTIONS

1 MARKS QUESTIONS

1. HEAT

1. Covert 20^0C into Kelvin scale. (Q.no-8)
2. During the winter season we observed that the water droplets in the grass. How are these droplets formed on the grass? (See Page No-13)
3. SreeKanth observed that during melting the temperature remains constant for certain time. What is the reason behind that and explain process of melting? (See Page-15, 5th Para)
4. A is in thermal equilibrium with B and B is in thermal equilibrium with C. If the temperature of A is 40^0, then what is the temperature of C in Kelvin? (See Page No-3)
5. Why do we sweat while doing a work? (See Page-12, 1st Para)
6. What happens to the water when wet clothes dry? (Q.No-10)
7. Equal amounts of water are kept in a cap and in a dish. Which will evaporate faster? Why? (Q.No-11)
8. Does the temperature of water rise continuously if heat is supplied to it continuously? (Page-14, 3rd Para last line)

3. REFLECTION OF LIGHT BY DIFFERENT SURFACES

9. Vikram saw his face in his car mirror and found his image is small. What are the mirror that is and write their characteristics?(See Page-61)
10. Which principle is used in law of reflection of light? (See Page-47, Last Para)
11. State the law of reflection of light? (Q.no-1)
12. What are the mirrors used in car head lights? Why should it be placed in order to get parallel beam?
13. What do you know about the terms given below related to spherical mirrors? (Q.no-8)
    a) Pole b) Centre of curvature c) Focus d) Radius of curvature e) Focal length
    f) Principal axis g) Object distance h) Image distance i) Magnification.

5. REFRACTION OF LIGHT AT PLANE SURFACES

14. A person move away from lens and found that his image is not formed on the lens. What is that lens? Why the image is not formed?
15. What is the principle involved in the optical fiber? (See Page-106, 2nd Para)
16. Why should you see a mirage as flowing water? (See Page-105)
17. Can you take a photo of a mirage? (See Page-105, Think and Discuss)
18. The speed of the light in a diamond is 1, 24, 000 km/s. Find the refractive index of diamond if the speed of light in air is 3, 00,000 km/s. (Q.no-2)
19. Refractive index of glass relative to water is $\frac{9}{8}$. What is the refractive index of water relative to glass? (Q.no-3)

20. Why does a diamond shine more than a glass piece cut to the same shape? (Q.no-27)
21. Why it is too difficult to shoot a fosh swimming in the water? (Q.no-1)
22. Determine the refractive index of benzene if the critical angle of it is 42^0.(Ans: 1.51) (Q.no-5)

6. REFRACTION OF LIGHT AT CURVED SURFACES

23. A convex lens has focal length 15 cm. If the object is placed at a distance of 12cm from the lens. Where will the image formed and what kind of image is it? (Q.no-3 Model)
24. Give the characteristic properties of image formed by the object?
25. Write the lens makers formula and explain the terms in it? (Q.no-5)
26. Harsha tells Siddhu that the double convex lens behaves like a convergent lens. But Siddhu knows that Harsha's assertion is wrong and corrected Harsha by asking some questions. What are the questions asked by Siddhu? (Q.no-8)
27. can virtual image be photographed by a camera? (Q.no-11)

7. HUMAN EYE AND COLOURFUL WORLD

28. A student passed white light into a prism. Draw the diagram showing this information?
29. Light of wavelength λ_1 enters a medium with refractive index n_2 from a medium with refractive index n_1. What is the wavelength of light in second medium? (Q.no-8)
30. Doctor advised to use 3D lens? What type of lens the person has to wear and what is its focal length? (SeePage-144 {Model})

11. ELECTRICITY

31. What is the value of 1KWH in Joules? (Q.no 9)
32. Why do we consider tungsten as a suitable material for making the filament of a bulb? (Q.no 18)
33. If the resistance of your body is 100000Ω what would be the current that flow in your body when you touch the terminals of a 12V battery? (Q.no 28)
34. What apparatus are required to study the relation between resistance and length of the conductors? (See Page-241, Activity-3 ,1^{St} Two lines)
35. A bulb marked 80W and 120 V. Find the resistance of the bulb?(See Page-249)
36. Draw the symbol of Battery, Rheostat and Resistance?
37. What do you mean by short circuit? Why does a short circuit damage electric wiring and devices connected to it? (See Page-251, Think and Discuss)

12. ELECTROMAGNETISM

38. Are the magnetic lines closed? Explain. (Q.no-1)
39. The value of magnetic induction of uniform field is 2T. What is the flux passing through the surface of area 1.5 m^2 perpendiculars to field? (Q.no-10)
40. How the magnetic lines are formed in a solenoid? (See Page-266)
41. Kavya observed a deflection in magnetic compass when he placed the compass near a current carrying conductor. Why does the compass deflected? (See Page-260)
42. Why does the picture appear distorted when a bar magnet is brought close to the screen of a television? Explain?(Q.no-6)
43. Rajkumar said to you that the magnetic field lines are open and they start at North Pole of bar magnet and end at South Pole. What questions do you ask Rajkumar to correct him by saying "field lines are closed"? (Q.no-17)

PHYSICS IMPORTANT QUESTIONS

4 MARKS QUESTIONS

1. HEAT

1. Answer these. (Q.no-6)
   a) How much energy is transferred when 1gm of boiling water at 100^0C condenses to water at100^0C?
   b) How much energy is transferred when 1gm of boiling water at 100^0C cools to waterat 0^0C?
   c) How much energy is transferred when 1gm of water at 0^0C freezes to ice at 0^0C?
   d) How much energy is transferred when 1gm of steam at 100^0C turns to ice 0^0C?
2. Explain the procedure of finding specific heat of solid experimentally. (Q.no-7)
   (or) Anitha wants to place a lid of more specific heat on a cooking vessel. For that she wants to know the specific heat of aluminium and copper. What are the appratus she required ? How would she conducts this experiment?
3. Suggest an experiment to prove that rate of evaporation of liquid depends on its surface area and vapor already present in surrounding air. (Q.no-12)
4. How do you appreciate the role higher specific capacity value of water in stabilizing atmospheric temperature during winter and summer seasons? (Q.no-16)

3. REFLECTION OF LIGHT BY DIFFERENT SURFACES

5. How do you verify the 1st law of reflection of light with an experiment? (Q.no-13)
   (or) Derive the relation between angle of incident and angle of refraction?
6. Make a solar heater/cooker and explain the process of making? (Q.no-23)
7. How do you appreciate the role of spherical mirrors in our daily life? (Q.no-25)
8. Collect the information about the history of spherical mirrors in human civilization. Display in your class room? (Q.no-17)
9. During ancient times Archimedes used the burn the ships and tents by using mirrors.
   1). What mirrors used by kings?
   2). Which energy they utilized to burn the ships ?
   3). What is the method they have used?
   4). Draw the ray diagrams of these phenomenon?

5. REFRACTION OF LIGHT AT PLANE SURFACES

10. Explain the refraction of light through the glass slab with a neat ray diagram. (Q.no-16)
11. What is the angle of deviation produced by the glass slab? Explain with ray diagram.(Q.no-22)
12. Explain the formation of mirage? (Q.no-6)
13. How do you verify experimentally that $\frac{\text{Sin i}}{\text{Sin r}}$ is constant. (Q.no-7)

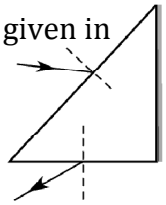
6. REFRACTION OF LIGHT AT CURVED SURFACES

14. How do you find the focal length of the lens experimentally? (Q.no-7)
15. Collect the information about lenses used by Galileo in his telescope? (Q.no-15)
16. How do you appreciate the coincidence of the experimental facts with the results obtained by a ray diagram in terms of behaviour of images formed by lenses? (Q.no-22)

7. HUMAN EYE AND COLOURFUL WORLD

17. How do you correct the eye defect, Myopia? (Q.no-1)
18. Explain the correction of the eye defect, Hypermetropia? (Q.no-2)
19. Suggest an experiment to produce rainbow in your classroom and explain procedure. (Q.no-11)

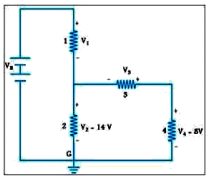
20. The focal length of a lens suggested to a person with Hypermetropia is 100cm. Find the distance of near point and power of the lens. (Ans: 33.33cm, 1D) (Q.no-21)
21. Incident ray on one of the face (AB) of a prism and emergent ray from the face AC are given in figure. Complete the ray diagram. (Q.no-13)



22. How do you appreciate the working of Ciliary muscles in the eye? (Q.no-16)

11. ELECTRICITY

23. How do you verify that resistance of a conductor is proportional to the length of the conductor for constant cross section area and temperature? (Q.no-7)
24. Deduce the expression for the equivalent resistance of the three resistors connected in series. (Q.no-12)
25. Deduce the expression for the equivalent resistance of the three resistors connected in parallels.((Q.no-13)
26. Suppose that you have three resistors each of value 30Ω. How many resistors can you obtain by various combinations of these three resistors? Draw diagrams in support of your predictions. (Q.no-21)
27. State Ohm's law. Suggest an experiment to verify it and explain the procedure. (Q.no-23)
28. Observe the circuit and answer the questions given below. (Q.no-27)



Q1. Are resistors 3 and 4 in series?
Q2. Are resistors 1 and 2 in series?
Q3. Is the battery in series with any resistors?
Q4. What is the potential drop across the resistor?
Q5. What is the total emf in the circuit if the potential drop across the resistor 1 is 6V?

29. A house has 3 tube lights, two fans and a Television. Each tube light draws 40W. The fan draws 80W and the Television draw 60W. On the average, if all the tube lights are kept on for five hours, two fans for 12 hours and the television for five hours every day. Find the cost of electric energy used in 30 days at the rate of Rs. 3.00 per KWH. (Q.no-30)
30. What is the name given to obstruction to the motion of the electrons ? What are the factors that influences the quantity and derive the expressions for the quantity? (Q.no-6)

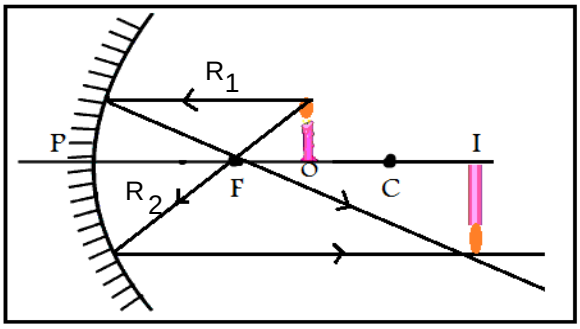
12. ELECTROMAGNETISM

31. Explain the working of electric motor with a neat diagram. (Q.no-8)
32. Derive Faraday's law of induction from conservation of energy. (Q.no-9)
33. Explain the working of AC electric generator with a neat diagram. (Q.no-15)
34. Explain the working of DC generator with a neat diagram. (Q.no-16)
35. Which of the various methods of current generation protects the nature well? Give examples to support your answer. (Q.no-29)

IMPORTANT DIAGRAMS

1. Draw a neat diagram of transfer of heat that flows from a hotter to a colder body and labelled the parts? (Page-4)
2. Draw a diagram and labelled the parts to prove that the rate of increase in temperature depends or the nature of substance? (Page-5)
3. Draw the ray diagrams of reflection of light by concave mirror in the following cases?
   a). When an object is placed on the principle axis of a concave mirror away from the centre of curvature? (Page-59, Fig-24)
   b). When an object is placed on the principle axis of a concave mirror between the mirror (pole) and focal point? (Page-59, Fig-25)

c). When an object is placed on the principle axis of a concave mirror between focal point and centre of curvature? (Page-, Fig-)



d). When an object is placed on the principle axis of a concave mirror on focal point? (Page-60, Fig-26)

e). When an object is placed on the principle axis of a concave mirror on centre of curvature? (Page-60, Fig-27)

4. Draw the ray diagrams when the incident ray passes through the curved surfaces?
   a). Rarer medium to denser medium?
   b). Denser medium to rarer medium?
5. Draw the ray diagrams for image formation by convex lens in the following cases?
   a). When the object is placed beyond the centre of curvature? (Page-123, Fig-13)
   b). When the object on the centre of curvature? (Page-123, Fig-14)
   c). When the object is placed between the centre of curvature&focal point?(Page-123,Fig-15)
   d). When the object is placed on focal point? (Page-123, Fig-16)
   e). When the object is placed between focal point and optic centre? (Page-124, Fig-17)
   f). When the object is placed at infinity distance from centre of curvature? (Page-120, Fog-8{a})
6. Draw the structure of human eye and labeled the parts? (Page- 138, Fig-3)
7. Draw the diagram of magnetic field lines when current passes through the solenoid and labeled the parts? (page-266, Fig-6{b})
8 . Draw a neat diagram of Electric Motor and labelled the parts (Page-273, Fig 12(d))
9. Draw a neat diagram of AC generator and labelled the parts (Page-280, Fig-17(a))
10. Draw a neat diagram of DC generator and labelled the parts (Page-282, Fig-17(c))

CHEMISTRY IMPORTANT QUESTIONS

2. CHEMICAL REACTIONS AND EQUATIONS

2MARKS QUESTIONS

1. Balance the following chemical equations. (Q.no-2)
   a) $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$
   b) $Hg(NO_3)_2 + KI \rightarrow HgI_2 + KNO_3$
   c) $H_2 + O_2 \rightarrow H_2O$ d) $KClO_3 \rightarrow KCl + O_2$
   e) $C_3H_8 + O_2 \rightarrow CO_2 + H_2O$
2. Why is respiration considered as an exothermic reaction? Explain? (Q.no-9)
3. What is the difference between displacement and double displacement reactions? Write equations for these reactions? (Q.no-10)
5. What do you meant by corrosion? How can you prevent it? (Q.no-14)
6. Explain rancidity? (Q.no-15)
7. Calculate the volume, mass and number of molecules of hydrogen liberated when 230 g of sodium reacts with excess of water at STP. (atomic masses of Na = 23U, O = 16U, and H = 1U)(Page-29)

4. ACIDS, BASES AND SALTS

8. What is a neutralization reaction? Give two examples? (Q.no-2)
9. Why does tooth decay start when the pH of mouth is lower than 5.5? (Q.no-4)
10. Plaster of Paris should be stored in moisture – proof container. Explain why? (Q.no-9)
11. Fresh milk has a pH of 6. How does the pH change as it turns to curd? Explain your answer. (Q.no-10)

8. STRUCTURE OF ATOM

12. What is an orbital? How is it different from Bohr's orbit? (Q.no-7)
13. Which electronic shell is at a higher energy level K or L? (Q.no-15)
14. i. An electron in an atom has the following set of four quantum numbers to which orbital it belongs to:
    ii. Write the four quantum numbers for $1S^1$ electron. (Q.no-14)

n	l	m_l	m_s
2	0	0	$+\frac{1}{2}$

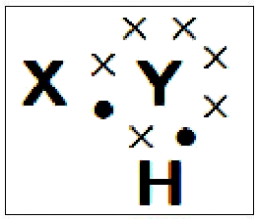
15. The wave length of a radio wave is 1.0m. Find its frequency. (Q.no-17)
16. How many elliptical orbits are added by Somerfield in third Bohr's orbit? What was the purpose of adding these elliptical orbits? (Q.no-5)

9. THE PERIODIC TABLE

17. Using the periodic table, predict the formula of compound formed between and element 'X' of group 13 and another element Y of group 16. (Q.no-21)
18. An element X belongs to 3^{rd} period and group 2 of the periodic table. State
    (a) The no. of valence electrons
    (b) The valence
    (c) Whether it is metal or a non-metal. (Q.no-22)
19. Collect the information regarding metallic character of elements of IA group and prepare report to support the idea of metallic character increases in a group as we move from top to bottom? (Q.no-26)

10. CHEMICAL BONDING

20. Why does Sodium always form a cation where as Fluorine atom always forms an anion? (Page-210)
21. Give the reason for low melting point for covalent compound when compared with ionic compounds? (Page 224)
22. What is octant rule? How do you appreciate role of the 'octant rule' in explaining the chemical properties of elements? (Q.no-16)
23. A chemical compound has the following Lewis notation: (Q.no-3)



a. How many valence electrons does element Y have?
b. What is the valence of element Y?
c. What is the valence of element X?
d. How many covalent bonds are in the molecule?
e. Suggest a name for the elements X and Y.

24. What is hybridization? Explain the formation of the following molecules using hybridization.
a). Be Cl_2 b). BF_3 (Q.no-18)

13. METALLURGY

25. What is thermite process? Mention its applications in daily life? (Q.no-20)
26. Write a note on ore dressing in metallurgy? (Q.no-3)
27. Write the names of any two ores of iron? (Q.no-5)
28. How do metals occur in nature? Give examples to any two types of minerals? (Q.no-6)
29. Write short notes on each of the following: 1. Roasting 2. Calcination 3. Smelting. (Q.no-9)

14. CARBIN AND ITS COMPOUND

30. What do we call the Self linking property of carbon? (Q.no-10)
31. Give an example for estarification reaction? (Q.no-12)
32. What happens when a small piece of sodium is dropped into ethanol? (Q.no-26)
33. Collect information about artificial ripening of fruits by ethylene? (Q.no-32)
34. Draw the electronic dot structure of ethane molecule (C_2H_6) (Q.no-33)
35. Define homologoes series of carbon compounds? Mention any two characteristics of homologous series? (Q.no-16)

36. Allotropy is a property shown by which class substances: elements, compounds or mixtures? Explain allotropy with suitable examples? (Q.no-19)
37. Explain how sodium ethoxide is obtained from ethanol? Give chemical equations? (Q.no-20)
38. What is the functional group present in CH_3COOH ? How do you test that group?(See Page 330, 331)

CHEMISTRY IMPORTANT QUESTIONS

1 MARKS QUESTIONS

2. CHEMICAL REACTIONS AND EQUATIONS

1. What happens when we added copper to zinc sulphate solution?
2. Ramya observed apples, banana change their colour when they cut and expose to air. What is the reason? (Page-39)
3. Why do we apply paint on iron articles? (Q.no-19)
4. What is the use of keeping food in air tight containers? (Q.no-20)

4. ACIDS, BASES AND SALTS

5. You want to convert the alcohol into acid. What are the oxidizing agents you choose?
6. What is baking powder? How does it make the cake soft and spongy? (Q.no-17)
7. Give two important uses of washing soda and baking soda. (Q.no-18)
8. While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?(See Page-78)
9. What will happen if the pH value in our body increases? (See Page 83, 3rd Point)
10. What happens when an acid or base is mixed with water? (Q.no-3)

8. STRUCTURE OF ATOM

11. Writ e the four quantum numbers for the differentiating electron of sodium (Na) atom? (Q.no-12)
12. Collect the wave lengths and corresponding frequencies of three primary colours red, blue and green? (Q.no-16)
13. Distinguish between line spectrum and band spectrum? (See Page 164, 4th Para)
14. Rajeswari told that M shell is bigger size that L shell. Which quantum number gives this information?(See Page 167)

9. THE PERIODIC TABL

15. What relation about elements did Dobiereiner want to establish?(See Page 177)
(Or) What is meant by Dobernier triad and give one example?
16. How do you appreciate the role of electronic configuration of the atoms of elements in periodic classification? (Q.no-27)
17. Comment on the position of hydrogen in periodic table. (Q.no-29)

10. CHEMICAL BONDING

18. Why does it is difficult to remove an electron from Mg^+ ion than neutral Mg atom? (See Page 210)
19. What is the valency of the element having atomic number 20?
20. The electron configuration of an atom is 2, 8, 7. Whether it forms anion or cation? Why? (Page 210)
21. Represent each of the following atoms using Lewis notation:
a. Beryllium b. Calcium c. Lithium (Q.no-12)
22. Represent the molecule H_2O using Lewis notation. (Q.no-11)

13. METALLURGY

23. How do you convert sulphide ore into oxide ore? (Page 290)
24. List three metals that are found in nature as Oxide ores. (Q.no-1)
25. What is an ore? On what basis a mineral is chosen as an ore? (Q.no-4)
26. Write the names of any two ores of iron? (Q.no-5)
27. When do you use magnetic separation method for concentration of an ore? Explain with an example? 28. Define the terms 1. Gangue 2. Slag. (Q.no-11)
(Q.no-8)

14. CARBIN AND ITS COMPOUND

29. Write the IUPAC name of the next homologous of $CH_3OHCH_2CH_3$? (Q.no-15)
30. Draw the structure of 1. Propanal 2. Ethanoic acid 3. Propene 4. 2-chloro propene. 5. 1-hexyne 2. ethyne 7. pentan-2-one
31. Name the carboxylic acid used as a preservative. (Q.no-3)

32. Give the name functional group (i) –CHO (ii) –C=O. (Q.no-17)
33. Name the acid present in the vinegar? (Q.no-25)
34. What happens when a small piece of sodium is dropped into ethanol? (Q.no-26)

CHEMISTRY IMPORTANT QUESTIONS

4 MARKS QUESTIONS

2. CHEMICAL REACTIONS AND EQUATIONS

1. Write the balanced chemical equations for the following reactions. (Q.no-3)
   a) Zinc + Silver nitrate → Zinc nitrate + Silver.
   b) Aluminum + copper chloride → Aluminum chloride + Copper.
   c) Hydrogen + Chlorine. → Hydrogen chloride.
   d) Ammonium nitrate → Nitrogen + Carbon dioxide + water.
2. Write the balanced chemical equation for the following and indentify the type of reaction in each Case? (Q.no-4)
   a) Calcium hydroxide (aq) + Nitric acid (aq) → Water (l) + Calcium nitrate (aq)
   b) Magnesium (s) + Iodine (g) → Magnesium Iodide. (s)
   c) Magnesium(s) + Hydrochloric acid (aq) → Magnesium chloride (aq) + Hydrogen (g)
   d) Zinc(s) + Calcium chloride (aq) → Zinc Chloride (aq) + Ca(s)
3. A shiny brown coloured element 'X' on heating in air becomes black in colour. Can you predict the Element 'X' and the black coloured substance formed? How do you support your predictions? (Q.no-18)
4. Some combustion reactions are oxidation reactions. But Every oxidation reaction is not a combustion reaction. Give reason of this statement? (Q.no-12 Model)
5. Write the types of chemical reactions with examples?(See Page 30)

4. ACIDS,BASES AND SALTS

6. Compounds such as alcohols and glucose contain hydrogen but are not categorized as acids. Describe an activity to prove it. (Q.no-11)

8. STRUCTURE OF ATOM

7. In an atom the number of electrons in m shell is equeal to the number of electrons in the K and L shell. Answer the following questions? (Q.no-3)
   a. Which is the outer most shell?
   b. How many electrons are there in its outermost shell?
   c. What is the atomic number of an element?
   d. Write the electronic configuration of the element?
8. Explain the significance of three Quantum numbers in predicting the position ns of an electron in an atom. (Q.no-8)
9. Which rule is violated in the electronic configuration $1s^0\ 2s^2\ 2p^4$? (Q.no-11)
(Or) state and explain Hund's rule of maximum multiplicity?

10. a. How many maximum number of electrons can be accommodated in a principal energy shell?
    b. How many maximum number of electrons can be accommodated in a sub shell? (Q.no-2)
    c. How many maximum number of electrons can be accommodated in an orbital?
    d. How many sub shells will be present in a principal energy shell?
    e. How many spin orientations are possible for an electron in an orbital?
11. Rainbow is an example for continuous spectrum – explain? (Q.no-4)

9. THE PERIODIC TABLE

(Q.no-3)

12. Define the modern periodic Law. Discuss the construction of the long form of the periodic table?
13. Explain how the elements are classified into s, p, d and f- block elements in the periodic table and give the advantage of this kind of classification. (Q.no-4)
14. s - block and p - block elements except 18th group elements are sometimes called as 'Representative elements' based on their abundant availability in the nature. Is it justified? Why? (Q.no-9)
15. Complete the following table by using the periodic table. (Q.no-10)

Period Number	Filling up orbital's (Sub-shell)	Maximum number of electrons filled in all the sub-shell	Total number of electrons in the period
1			
2			
3			
4	4S, 3d, 4P	18	18
5			
6			
7	7S, 5f, 6d, 7P	32	Incomplete

16. The electronic configuration of the elements X, Y, and Z are given below? (Q.no-12)
    a) X=2 b) Y=2, 6 c) Z= 2, 8, 2
    i). Which element belongs to second period?
    ii). Which element belongs to second group?
    iii). Which element belongs to 18^{th} group?
17. What is a periodic property? How does the following change in a group and period? Explain?
    i. (a) Atomic radius (b) Iodization energy (c) Electron affinity (d) Electron negativity. (Q.no-18)
    ii. Explain the ionization energy order in the following sets of elements.
    a. Na, Al, Cl b. Li, Be, B c. C, N, O d. F, Ne, Na e. Be, Mg, Ca
18. Collect the information about the reactivity of VIIIA group elements (noble gases) from internet or from your school library and prepare a report on their special character when compared to other elements of periodic table? (Q.no-25)

10. CHEMICAL BONDING

19. Collect the information about properties and uses of covalent compounds and prepare a report? (Q.no-9)
20. Draw simple diagrams to show how electrons are arranged in the following covalent molecules:
    a) Calcium oxide (CaO) (b) Water (H_2O) (c) Chlorine (Cl_2) (Q.no-10)
21. Explain the formation of the following molecules using valence bond theory. (Q.no-17)
    a) Formation of N_2 molecule. b) Formation of O_2 molecule.
22. Explain the formation of sodium chloride and calcium oxide on the basis of the concept of electron transfer from one atom to another atom. (Q.no-5)

13. METALLURGY

23. Write short notes on froth floatation process? (Q.no-7)
24. Collect information about extraction of metals of low reactivity Silver, Platinum and Gold and prepare a report? (Q.no-16)
25. What is the activity series? How it helps in extraction of metals? (Q.no-19)

14. CARBIN AND ITS COMPOUND

26. Define homologoes series of carbon compounds? Mention any two characteristics of homologous series? (Q.no-16)
27. Explain the structure of Graphite in terms of bonding and give one property based on this structure?
28. How do you condemn the use of alcohol as a social practice? (Q.no-35) (Q.no-24)
29. How do you appreciate the role of esters in everyday life? (Q.no-34)
30. a. What are the various possible structure formulae of a compound C_3H_6O?
    b. Give the IUPAC names of the above possible compounds and represent them in structures.
    c. What is the similarity in these compounds? (Q.no-8)
31. Name the compound formed by heating ethanol at 443K with excess of conc.H_2SO_4? (Q.no-11)
32. Two carbon compounds A and B have molecular formula C3H8 and C3H6 respectively. Which one of the two is most likely to show addition? Justify your answer? (Q.no-27)

IMPORTENT DIAGRAMS

1. We know the ratio of Hydrogen and oxygen in water is 2:1, what type experimental arrangement you prefer in order to prove the above fact? Explain with diagram?

   (OR)

   Draw a neat diagram of representation of Electrolysis of water. (Page-33)
2. How do you draw a neat diagram of Acidic solution in water conducts electricity, and labelled the parts?(Page-76)
3. Draw the shape of S-orbital, P-orbital and D-orbital's. (Page-168)
4. Draw the diagram of electromagnetic waves and labelled the parts? (Page-161)
5. Draw a neat diagram of sequence of filling up of electrons into an orbital.

   (OR)

   Draw a Moeller Chart showing the increasing order of energy levels of various orbitals. (Page-172)
6. Draw a Lewis dot representation of formation of CH_4(Methane) molecule (Page-215)
7. Draw the diagram of Froth Floatation process for the concentration of of sulphide ores? (Page-290)
8. Draw a neat diagram of Magnetic separation of enrichment of ore and labelled the parts? (Page-290)
9. Draw the neat diagram of Blast Furnace and labelled the parts. (Page-298)
10. Draw a neat diagram of Reverberatory Furnance and labelled the parts? (Page-298)
11. Draw the diagram of diamond and labelled the parts?(Page 309)
12. Draw the diagram of arrangement of carbon atoms in graphite layers. (Page-310)

Note: - 1. Practice the IUPAC names of Carbon compounds list out in our text book.
2. While you are writing the IUPAC names of Carbon compounds take the help of your consultant subject teacher.