

 Join Whatsapp

www.freejobalert.com
Free Job Alert
.com

 Download App

Kerala SSLC Chemistry Answer Key 2026 (Unofficial): Check Solutions Here

FreeJobAlert.com

Section I: Questions 1 to 4 (1 Score Each)

Answer all questions.

1. Find the relation and fill in the blanks. The relationship between the number of molecules of a gas and its volume at constant temperature and pressure is given in the table:

| No. of molecules | Volume |
|------------------|--------|
| x | 20 |
| | 5 |

(a) $2x$ (b) $x/4$ (c) $x/2$ (d) x

Answer: (b) $x/4$

2. Assertion (A): When electricity is passed through an aqueous solution of sodium chloride, sodium is obtained at the cathode. Reason (R): The reduction tendency of Na^{+} is higher than that of H_2O . (a) Both (A) and (R) are correct, and (R) is the correct explanation of (A). (b) Both (A) and (R) are correct, and (R) is not the correct explanation of (A). (c) (A) is correct, but (R) is not correct. (d) Both (A) and (R) are not correct.

Answer: (d) Both (A) and (R) are not correct.

3. Match the following:

Column A **Column B**

(X) -CHO (i) Ether

(Y) -O-R (ii) Aldehyde

(Z) -OH (iii) Keto

(iv) Hydroxyl

Answer: Correct option: (c)

- (X) $\text{-CHO} \rightarrow$ Aldehyde (ii)
 - (Y) $\text{-O-R} \rightarrow$ Ether (i)
 - (Z) $\text{-OH} \rightarrow$ Hydroxyl (iv)
- (Note: The provided answer key maps these functional groups correctly to their names.)

4. Some statements related to the manufacture of aluminium are given. (i) The ore is treated with hot NaOH solution. (ii) Electricity is used as the reducing agent to extract the metal. (iii) As a result of electrolysis, aluminium is obtained at the anode.

Answer: Correct option: (b) Statements (i) and (ii) are correct, but (iii) is not correct.

- ✓ (i) Ore treated with hot NaOH solution (Bayer's process)
- ✓ (ii) Electricity used as reducing agent (Hall-Hérout)
- ✗ (iii) Aluminium obtained at cathode, not anode.

Section II: Questions 5 to 11 (2 Scores Each)

Answer any two questions from those having choices.

5. Observe the picture (Ammonia and HCl experiment) and answer: (a) Which substance is responsible for the thick white fumes? (b) Write the chemical equation of formation of this substance.

Answer:

(a) Ammonium chloride (NH_4Cl)

(b) $\text{NH}_3(\text{g}) + \text{HCl}(\text{g}) \rightarrow \text{NH}_4\text{Cl}(\text{s})$

6. Displacement Activities: (i) Ag rod is dipped in ZnSO_4 solution. (ii) Fe rod is dipped in CuSO_4 solution. (a) In which of these solutions does the displacement reaction take place? (b) Which metal undergoes oxidation in the above reaction?

Answer:

(a) Activity (ii) – Fe rod in CuSO_4 solution

(b) Iron (Fe) undergoes oxidation

7. Zinc blende (ZnS) is an ore of zinc. (a) Which is the concentration method suitable for zinc blende? (b) Which is the process used to convert the concentrated ore into its oxide?

Answer:

(a) Froth flotation

(b) Roasting

8. Homologous series: C_2H_2 , C_3H_4 , C_4H_6 (a) Write the molecular formula of the fifth member of this series. (b) Write the structural formula of a position isomer of this compound.

Answer:

(a) Fifth member: C_6H_{10} (C_nH_{2n-2})

(b) Position isomer example: $CH_3-C\equiv C-CH_2-CH_2-CH_3$ (hex-2-yne)

9. Manganese (Mn , At. No. 25): (a) Find the oxidation state of Mn in MnO_2 . (b) Write the subshell electron configuration of manganese ion in MnO_2 .

Answer:

(a) Oxidation state of Mn in MnO_2 = +4

(b) Mn^{4+} electronic configuration: $[Ar] 3d^3$

10. (A) Methane Combustion: $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ (a) Find the mass of oxygen required to react with 160 g of methane. (b) Find the volume of CO_2 at STP produced by the complete combustion of 80 g of methane.

Answer (Option A):

(a) Mass of O_2 required for 160 g CH_4 = 640 g

(b) Volume of CO_2 at STP from 80 g CH_4 = 112 L

OR (B) Sample of NH_3 gas at STP is 89.6 L. (a) Calculate the mass of the NH_3 sample. (b) How many molecules are present in the sample?

Answer (Option B):

(a) Mass of NH_3 (89.6 L at STP) = 68 g

(b) Number of molecules = 2.408×10^{24} molecules

11. (A) Chemical reactions: (i) $\text{CH}_2=\text{CH} + \text{HCl} \rightarrow \text{P}$ (ii) $n\text{P} \rightarrow \text{Q}$ Write the structures and names of P and Q.

Answer (Option A):

P: $\text{CH}_2=\text{CHCl}$ (chloroethene / vinyl chloride)

Q: $-\text{CH}_2-\text{CHCl}-$ (Polyvinyl chloride / PVC)

OR (B) Reaction: $\text{CO} + 2\text{H}_2 \rightarrow \text{A}$ (a) Write the structural formula of A. (b) Write the chemical equation for the reaction that produces ethanoic acid from A.

Answer (Option B):

(a) A (from $\text{CO} + 2\text{H}_2$) = CH_3OH (methanol)

(b) Methanol \rightarrow ethanoic acid: $\text{CH}_3\text{OH} + \text{CO} \rightarrow \text{CH}_3\text{COOH}$ (catalytic carbonylation)

Section III: Questions 12 to 17 (3 Scores Each)

Answer any six questions from those having choices.

12. (A) Element P (3rd period) has its last 2 electrons in the s subshell. (a) What is the atomic number of this element? (b) Write the chemical formula of the oxide of this element. (c) Write the subshell electron configuration of the element in the 4th period belonging to the same group.

Answer (Option A):

(a) Atomic number = 12 (Mg)

(b) Oxide formula = MgO

(c) 4th period, same group (Ca): $[\text{Ar}] 4s^2$

OR (B) Position of elements P (P-2, G-16) and Q (P-3, G-1). (a) Write the n and l values of the outermost subshell of Q containing electrons. (b) How many orbitals will be present in the subshell containing the outermost electron of P? (c) Write the chemical formula of the compound formed by combining P and Q.

Answer (Option B):

- (a) Q (Period 3, Group 1): $n = 3, l = 0$
- (b) P (Period 2, Group 16): outermost $2p \rightarrow 3$ orbitals
- (c) Compound P + Q = Na_2O

13. Analyze the list of compounds (Acids, Alcohols, Esters): (a) Choose an ester from this. (b) Write the IUPAC name of the acid and alcohol that must be reacted to prepare this ester. (c) Write the equation for the chemical reaction of formation of this ester.

Answer:

- (a) Ester: $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2\text{CH}_3$ (ethyl butanoate)
- (b) Acid = Butanoic acid | Alcohol = Ethanol
- (c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH} + \text{CH}_3\text{CH}_2\text{OH}$
 $\rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{COOCH}_2\text{CH}_3 + \text{H}_2\text{O}$

14. Analyze the graph of PV vs P at constant temperature: (a) State the gas law associated with this graph. (b) The volume of gas at 2 atm is 450 L. What is the new volume if pressure is increased 3 times?

Answer:

- (a) Boyle's Law
- (b) New volume = 150 L

$$P_1V_1 = P_2V_2 \rightarrow 2 \times 450 = (2 \times 3) \times V_2 \rightarrow 900 = 6V_2 \rightarrow V_2 = 150 \text{ L}$$

Section III: Questions 15 to 17 (3 Scores Each) - Continued

15. (A) Various types of steels are used for industrial purposes. (a) Write the steel that can be used for the given purposes: (i) For the manufacture of springs, knives, and drills. (ii) Construction of railway tracks and rafters. (b) Write one use of electric steel.

OR (B) A very dilute sodium chloride solution is taken in two test tubes.

Put an iron nail wrapped in copper wire in one test tube and iron nail wrapped in magnesium wire in the other test tube. (a) In which test tube does the nail undergo rusting? Write the reason. (b) Although aluminium is a very reactive metal, it resists corrosion to a certain extent. Why?

Suggested Answers:

(A) > (a) (i) Alloy steel / Stainless steel (specifically High Carbon Steel for tools).

(ii) Hard steel / Manganese steel.

(b) Used in the manufacture of electromagnets, transformers, and electric motors.

OR (B) > (a) The nail wrapped in copper wire. Copper is less reactive than iron, so iron acts as the anode and undergoes oxidation (rusting).

(b) Aluminium reacts with oxygen in the air to form a thin, stable layer of aluminium oxide (Al_2O_3) on its surface, which prevents further reaction with air or moisture.

16. Some hints about an organic compound are given: (i) There are five carbon atoms in one molecule. (ii) The position of the carbonyl ($-CO-$) group is two. (a) Write the structural formula of this organic compound. (b) Write the structural formula and IUPAC name of a functional isomer of this compound.

Suggested Answers:

(a) $CH_3-CO-CH_2-CH_2-CH_3$ (Pentan-2-one)

(b) Structural Formula: $CH_3-CH_2-CH_2-CH_2-CHO$

IUPAC Name: Pentanal (an aldehyde is a functional isomer of a ketone).

17. Some metals and their salt solutions are given: $Zn, Fe, Ag, Cu, Mg, ZnSO_4, FeSO_4, CuSO_4, MgSO_4, AgNO_3$ (*Hint: Reactivity: $Mg > Zn > Fe > Cu > Ag$*) (a) Which of the given metals are used to make a galvanic cell with the highest voltage? (b) Write the chemical equation of the reaction taking place at the cathode in this cell.

(c) Which of the given metals acts only as the anode when galvanic cells are made?

Suggested Answers:

(a) **Magnesium (\$Mg\$) and Silver (\$Ag\$)**. (The pair with the greatest difference in reactivity produces the highest voltage).

(b) $\text{Ag}^+(\text{aq}) + \text{e}^- \rightarrow \text{Ag}(\text{s})$

(c) **Magnesium (\$Mg\$)**. As the most reactive metal in the list, it will always undergo oxidation (act as the anode) when paired with any other metal from the list.

Section IV: Question 18 (4 Scores)

18. (A) Some hints are given about compound X: (i) Known as the "king of chemicals." (ii) Prepared industrially through the Contact Process. (a) Write the ionisation equation of X. (b) Write the name of the acid formed when X reacts with \$NaCl\$. (c) What is the nature of the salt formed when X reacts with ammonium hydroxide? Write the reason.

OR (B) The chemical formula of calcium chloride is \$CaCl_2\$. (a) Which alkali should be used to form this salt? (b) Write the ionisation equation of this alkali. (c) Will calcium chloride undergo salt hydrolysis? Why?

Suggested Answers:

(A) (Note: X is Sulphuric Acid, H_2SO_4)

(a) $H_2SO_4 \rightarrow 2H^+ + SO_4^{2-}$

(b) **Hydrogen chloride (\$HCl\$) / Hydrochloric acid.**

(c) **Acidic salt.** It is formed by the reaction of a strong acid (H_2SO_4) and a weak base (NH_4OH).

OR (B)

(a) **Calcium hydroxide [$Ca(OH)_2$].**

(b) $Ca(OH)_2 \rightarrow Ca^{2+} + 2OH^-$

 Join Whatsapp

www.freejobalert.com
Free Job Alert
.com

 Download App

(c) **No.** It is a salt of a strong acid (HCl) and a strong base [$\text{Ca}(\text{OH})_2$]. Such salts do not undergo hydrolysis and form neutral solutions.

Disclaimer: The information provided on this website is for reference purposes only and may contain errors or inaccuracies. Users are advised to verify the details with official sources or textbooks before relying on the content.

FreeJobAlert.com