

ANNUAL EXAMINATION 2025 -
PRACTICE QUESTION PAPER
CHEMISTRY

Time : 1.30 Hrs

STD IX

Score : 40

Answer any 4 questions from 1 to 5. Each question carries 1 score. (4 x 1 =4)

1. The chemical and physical properties of elements are periodic functions of their -----, 1
2. Which of the following is the balanced chemical equation? 1
- a. $Mg + O_2 \rightarrow MgO$
b. $Mg + O_2 \rightarrow 2MgO$
c. $2Mg + O_2 \rightarrow MgO$
d. $2Mg + O_2 \rightarrow 2MgO$
3. $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$, What type of chemical reaction is this? 1
- a. Combination reaction
b. Decomposition reaction
c. Displacement reaction
d. Double decomposition
4. Which is the correct statement regarding sugar solution? 1
- a. It is a homogeneous mixture.
b. It is a solid solution
c. The solvent in it is a solid
d. It is always a saturated solution
5. When nitrogen dioxide dissolves in rainwater, ----- is obtained. 1

Answer any 4 questions from 6 to 10. Each question carries 2 score .

(4 x 2 =8)

6. Diagrammatically represent the orbit electron configuration of Al ²⁷/₁₃ 2
7. Mg (Atomic No:12)
a. Write electron configuration of this Atom. 2
b. Find the period and group to which it belongs
8. Solutions of ammonium chloride and sodium hydroxide are taken in a test tube and heated. 2
- a. Which gas is produced?
b. Why does the rate of a chemical reaction increase as temperature increases?
9. Heat the boiling tube containing potassium permanganate. 2
- a. Insert a burning matchstick to the mouth of the boiling tube.
What is the observation?
b. Which gas is obtained?

10. Write an example for aromatic hydrocarbons

2

Write its molecular formula.

Answer any 4 questions from 11 to 15. Each question carries 3 score. (4 x 3 =12)

11. Electron configuration of elements P, Q, R are given. (symbols are not real)

P - 2,8,6

Q - 2,8,1

R - 2,8,8

a Which is the most stable element among these?

1

b. What are the valencies of the elements P and Q?

1

c. Write the chemical formula of the compound formed when P and Q combine.

1

12. $C + 4HNO_3 \rightarrow 2H_2O + CO_2 + 4NO_2$

a. Find out and mark the oxidation number of carbon in this reaction..

1

b. What happens to carbon-oxidation or reduction?

1

c. What are the oxidising agents in this reaction?

1

13. Write the answers to the following questions on the preparation of chlorine gas in the laboratory..

a. What are the chemicals required to prepare chlorine gas?

1

b. Chlorine gas is collected by passing it through water. Why?

1

c. Chlorine gas is passed through concentrated sulphuric acid. Why?

1

14. If 10 g common salt is dissolved in 90 g water. Calculate the concentration in terms of mass percentage?.

3

15. a. How is coal formed in nature?

1

b. Write any two uses of coal.

2

Answer any 4 questions from 16 to 20. Each question carries 4 scores .(4 x 4 =16)

16. The solubilities of certain salts in a saturated solution prepared in 100 g water, at different temperatures is tabulated below.

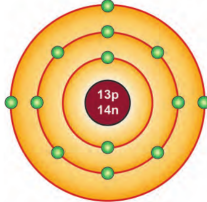
Solute	Temperature oC - Solubility (g/100 g water)				
	10°C	20°C	40°C	60°C	80°C
Potassium nitrate (KNO ₃)	21	32	62	106	167
Sodium chloride (NaCl)	36	36	36	37	37
Ammonium chloride (NH ₄ Cl)	24	37	41	55	66

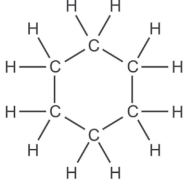
- a. Which salt shows the maximum solubility at low temperature? 1
- b. How does solubility change when temperature increases? 1
- c. What is the amount of solute required to prepare a saturated solution of potassium nitrate in 50 g water at 40°C? 1
- d. Which salt given in the table does not show much difference in solubility with varying temperature? 1
17. a. What are the four crystalline allotropes of carbon? 2
- b. Which are the electrically conductive allotropes of carbon? 1
- c. Which allotrope is used as a lubricant? 1
18. Write two advantages and two limitations of using hydrogen as a fuel. 4
19. Molecular formula of some hydrocarbons are given below.
 C_3H_8 , C_4H_8 , C_4H_{10} , C_3H_6
- a. Which among these are alkanes? 1
- b. What is the general formula of alkenes? 1
- c. Write the molecular formula of alkyne having 4 carbon atoms. 1
- d. Write the name of this alkyne 1
20. a. A cyclic hydro carbon has a molecular formula C_6H_{12} .
 Draw the structure of this compound. 1
- b. Write the condensed formula of the open chain hydrocarbon having the same molecular formula. 1
- c. Give the name of these two compound. 2

Answer Key

Scoring Key

Annual Exam CHEMISTRY (ENG Medium)

Q No	S Q NO	Key point	Score	Total
1	-	Atomic number	1	1
2	-	d. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$	1	1
3	-	d. Double decomposition	1	1
4	-	a. It is a homogeneous mixture.	1	1
5	-	nitric acid / HNO_3 .	1	1
Max 4 Score				
6				2
7		2, 8, 2 Period - 3 group - 2	1 $\frac{1}{2} + \frac{1}{2}$	2
8	a	Ammonia	1	2
	b	When the reactants are heated, the kinetic energy of the particles increases./ the number of particles that attain the threshold energy increases/ the number of effective collisions increases (any one)	1	
9	a	Matchstick burns brightly	1	2
	b	oxygen	1	
10	a	Benzene /naphthalene	1	2
	b	Correct structure	1	
Max 8 Score				
11	a	R - 2,8,8 /R	1	
	b	P valency -2 and Q valency - 1	$\frac{1}{2} + \frac{1}{2}$	3
	c	Q_2P	1	
12	a	$\text{C}^0 + 4\text{HNO}_3 \rightarrow 2\text{H}_2\text{O} + \text{C}^{+4}\text{O}_2 + 4\text{NO}_2$	$\frac{1}{2} + \frac{1}{2}$	
	b	oxidation	1	3
	c	HNO_3	1	
13	a	KMnO_4 and HCl	1	3
	b	To remove hydrogen chloride from chlorine gas	1	

14	c	To remove vapour from chlorine gas	1	3
		Mass of solution 90g + 10g = 100g Mass percentage = Mass of solute/ Mass of solution x 100 10/100 x 100 = 10%	3	
15	a	Coal is formed as a result of the carbonisation of plant remains that lie buried in the soil for years.	1	3
	b	Used Domestic, industrial fuel Used for the manufacture of coke, coal tar, coal gas. (any other two uses)	1+1	
Max 12 Score				
16	a	Sodium chloride (NaCl)	1	4
	b	temperature increases solubility increases	1	
	c	31g	1	
	d	Sodium chloride (NaCl)	1	
17	a	Diamond, Graphite, Fullerene, Graphene	$\frac{1}{2} \times 4$	4
	b	Graphite, Graphene	1	
18	c	Graphite	1	4
		<u>Advantages</u> 1. When hydrogen is used as a fuel, the possibility of pollution is very low, since water is the only product formed. 2. High calorific value	4	
		<u>Limitation</u> 1. Hydrogen is a gas that burns with an explosion. 2. It is difficult to store and distribute hydrogen	4	
19	a	C_3H_8 , C_4H_{10}	1	4
	b	C_nH_{2n}	1	
	c	C_4H_6	1	
	d	butyne	1	
20	a		1	4
	b	$CH_2=CH-CH_2-CH_2-CH_2-CH_3$	1	
	c	a) cyclohexane b) hexene	1	
Max 16 Score				