



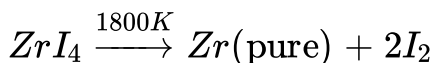
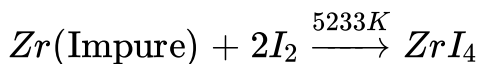
## CHEMISTRY

### BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

#### SAMPLE PAPER-4 (SOLVED)

#### Part I

1. The following set of reactions are used in refining Zirconium



This method is known as .....

A. (a) Liquation

B. (b) Van Arkel process

C. (c) Zone refining

D. (d) Mond's process

**Answer:**



[Watch Video Solution](#)

2. The stability of +1 oxidation state increases in the sequence

A.  $Al < Ga < In < Tl$

B.  $Tl < In < Ga < Al$

C.  $In < Tl < Ga < Al$

D.  $Ga < In < Al < Tl$

**Answer:**



[Watch Video Solution](#)

3. Assertion : bond dissociation energy of fluorine is greater than chlorine gas.

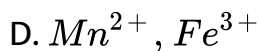
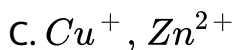
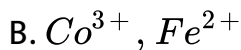
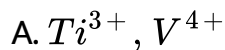
Reason: chlorine has more electronic repulsion than fluorine.

- A. (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- B. (b) Both assertion and reason are true reason is not the correct explanation of assertion.
- C. (c) Assertion is true but reason is false.
- D. (d) Both assertion and reason is false.

**Answer:**

 [Watch Video Solution](#)

4. Which of the following pair has  $d^{10}$  electrons?



**Answer:**



**Watch Video Solution**

5. The yellow coloured in NaCl crystal is due to

A. excitation of electrons in F centres

B. reflection of light from  $Cl^{-}$  ion on the surface

C. refraction of light from  $Na^{+}$  ion

D. all of the above

**Answer:**



**Watch Video Solution**

6. For a reaction  $\text{Rate} = k [\text{acetone}]^{\frac{3}{2}}$  then unit of rate constant and rate of reaction respectively is

A.  $(\text{mol L}^{-1}\text{s}^{-1}), (\text{mol}^{-1/2}\text{L}^{1/2}\text{s}^{-1})$

B.  $(\text{mol}^{-1/2}\text{L}^{1/2}\text{s}^{-1}), (\text{mol L}^{-1}\text{s}^{-1})$

C.  $(\text{mol}^{1/2}\text{L}^{1/2}\text{s}^{-1}), (\text{mol L}^{-1}\text{s}^{-1})$

D.  $(\text{mol Ls}^{-1}), (\text{mol}^{1/2}\text{L}^{1/2}\text{s})$

**Answer:**



**Watch Video Solution**

7. Arrange the acids (i)  $H_2SO_3$  (ii)  $H_3PO_3$  and (iii)  $HClO_3$  in the decreasing order of acidity.

A. (i) > (iii) > (ii)

B. (i) > (ii) > (iii)

C. (ii) > (iii) > (i)

D. (iii) > (i) > (ii)

**Answer:**



**Watch Video Solution**

8. The value of cell emf of Mercury button cell is .....

A. 1.35 V

B.  $-0.76V$

C.  $0.34 V$

D.  $100 V$

**Answer:**



**Watch Video Solution**

**9.** The reagent used to distinguish between acetaldehyde and benzaldehyde is

A. Tollens reagent

B. Fehling's solution

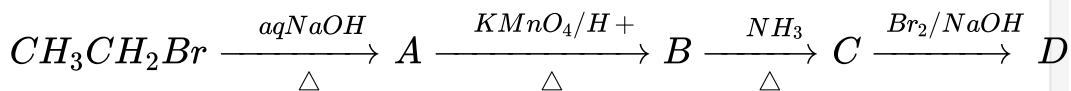
C. 2,4 - dinitrophenyl hydrazine

D. semicarbazide

Answer:

 Watch Video Solution

10.



A. bromomethane

B.  $\alpha$  - bromo sodium acetate

C. methanamine

D. acetamide

Answer:

 Watch Video Solution



11. Match the following.

Column I	Column II
A. Vitamin $B_{12}$	1. Scurvy
B. Vitamin C	2. Haemorrhagic diseases
C. Vitamin D	3. Pernicious anaemia
D. vitamin K	4. Rickets

A. 

A	B	C	D
3	1	4	2

B. 

A	B	C	D
1	2	3	4

C. 

A	B	C	D
4	3	2	1

D. 

A	B	C	D
2	4	1	3

**Answer:**

 [Watch Video Solution](#)

12. Regarding cross-linked or network polymers, which of the following statement is incorrect?

- A. Examples are Bakelite and melamine
- B. They are formed from bi and tri-functional monomers
- C. They contain covalent bonds between various linear polymer chains
- D. They contain strong covalent bonds in their polymer chain

**Answer:**

 [Watch Video Solution](#)

## Part ii

1. Give the uses of zinc.

 [Watch Video Solution](#)

2. Explain why fluorine always exhibit an oxidation state of -1 ?

 [Watch Video Solution](#)

3. What is Zeigler -Natta catalyst? In which reaction it is used?

Give equation.

 [Watch Video Solution](#)

4. Give any three characteristics of ionic crystals.

 [Watch Video Solution](#)

5. How is surface area of the reactant affect the rate of the reaction?



[Watch Video Solution](#)

 Watch Video Solution

6.  $K_{sp}$  of  $Al(OH)_3$  is  $1 \times 10^{-15} M$ . At what pH does  $1.0 \times 10^{-3} M Al^{3+}$  precipitate on the addition of buffer of  $NH_4Cl$  and  $NH_4OH$  solution.

 Watch Video Solution

7. Arrange the following in the increasing order of their boiling point and give a reason for your ordering

(i) Butan -2-ol, Butan -1-ol, 2- methylpropan -2-ol

(ii) Propan -1-ol, propan -1,2,3-triol, propan-1,3-diol, propan -2-ol

 Watch Video Solution

8. What are the uses of Benzaldehyde?



Watch Video Solution

9. What are anti fertility drugs? Give examples.



Watch Video Solution

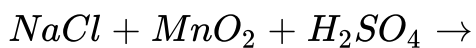
## Part Iii

1. Give the uses of silicones.



Watch Video Solution

2. Complete the following reactions .



Watch Video Solution

3. Draw the structure of dichromate ion.



[Watch Video Solution](#)

4. Why ionic crystals are hard and brittle ?



[Watch Video Solution](#)

5. Paracetamol is prescribed to take once in 6 hours. Justify this statement.



[View Text Solution](#)

6. A solution of a salt of metal was electrolysed for 150 minutes with a current of 0.15 amperes. The mass of the metal deposited at the cathode is 0.783g. Calculate the equivalent mass of the metal.

 [Watch Video Solution](#)

7. What happens when

i. 2-Nitropropane boiled with HCl

ii. Nitrobenzene electrolytic reduction in strongly acidic medium.

 [Watch Video Solution](#)

8. Write a short note on peptide bond.

 [Watch Video Solution](#)

9. (i) What class of drug is Ranitidine?

(ii) If water contains dissolved  $Ca^{2+}$  ions, out of soaps and synthetic detergents, which will you use for cleaning clothes?

(iii) Which of the following is an antiseptic? 0.2% phenol, 1% phenol.



[Watch Video Solution](#)

## Part IV

1. (i) Explain the concentration of copper pyrites and galena ores.

(ii) Out of  $Lu(OH)_3$  and  $La(OH)_3$  which is more basic and why?



[View Text Solution](#)



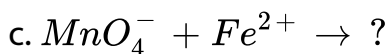
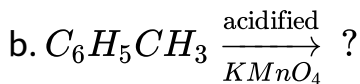
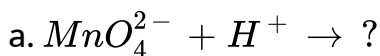
2. Explain the preparation of silicones.

 [Watch Video Solution](#)

3. Bleaching action of chlorine is permanent - Justify this statement and also give the uses of chlorine.

 [Watch Video Solution](#)

4. (i) Complete the following



(ii) What is linkage isomerism? Explain with an example.

 [View Text Solution](#)

5. (i) What is the two dimensional coordination number of a molecule in square close packed layer?

(ii) Derive the integrated rate law for a first order reaction?

 [Watch Video Solution](#)

6. (i) Define solubility product.

(ii) What is the pH of an aqueous solution obtained by mixing 6 gram of acetic acid and 8.2 gram of sodium acetate and making the volume equal to 500 ml. (Given:  $K_a$  for acetic acid is  $1.8 \times 10^{-5}$ )

 [Watch Video Solution](#)

7. (i) Why  $\lambda_m^\circ$  for  $CH_3COOH$  cannot be determined experimentally?

(ii) Write about the classification of organic nitro compounds.

 [View Text Solution](#)

8. Describe about condensation methods of preparation of colloids.

 [View Text Solution](#)

9. Describe chemical methods of preparation of colloids.

 [Watch Video Solution](#)

10. (i) What is Clemmensen reduction? Explain it.

(ii) Write the structure of the major product of the aldol condensation of benzaldehyde with acetone.

 [Watch Video Solution](#)

11. (i) How will you convert nitrobenzene into

1) 1,3,5 - trinitrobenzene 2) o and p - nitrophenol

(ii) Differentiate between Globular and fibrous proteins.

 [Watch Video Solution](#)