

**Sample Paper – 2011**  
**Class – XII**  
**Subject -Chemistry**

Time Allowed: 3 hours

Mm:70

- INSTRUCTIONS:**
- 1 Q- 1-8 CARRY 1 MARKS EACH**
  - 2 Q- 9-18 CARRY 2 MARKS EACH**
  - 3 Q 19-27 CARRY 3 MARKS EACH**
  - 4 Q-28-30 CARRY 5 MARKS EACH**
  - 5 Give answer according to marks in order to save time..**

**Section-A**

1. WHAT IS THE NATURE OF CRYSTAL DEFECT PRODUCED WHEN SODIUM CHLORIDE IS DOPED WITH MAGNESIUM CHLORIDE? 1
2. A REACTION IS 50% COMPLETE IN 2 HOURS AND 75% IN 4 HOURS WHAT IS ORDER OF THE REACTION?. 1
3. DRAW THE STRUCTURE OF SEMICARBAZONE OF CYCLOBUTANONE 1
4. WHAT HAPPEN WHEN FERROMAGNETIC SUBSTANCE IS SUBJECTED TO HIGH TEMPERATURE?. 1
5. WHAT IS RATE CONSTANT AND HOW DOES ITS VALUES VARY WITH REACTANT CONCENTRATION ( $1/2 + 1/2$ )
6. WHY IS SULPHURIC ACID NOT USED DURING THE REACTION OF ALCOHOLS WITH KI? 1
7. IN THE RING TEST FOR IDENTIFICATION OF NITRATE ION ,WHAT IS FORMULA OF THE COMPOUND RESPONSIBLE FOR BROWN RING FORMED AT THE INTERFACE OF 2 LIQUIDS?. 1
8. WHAT DO YOU UNDERSTAND BY TERM GLYCOSIDIC LINKAGE?. 1

**SECTION-B**

9. ALUMINIUM CRYSTALLISES IN A CUBIC CLOSE PACKED STRUCTURE .ITS METALLIC RADIUS IS 125pm
  - A. WHAT IS LENGTH OF SIDE OF THE UNIT CELL. 1
  - B. HOW MANY UNIT CELLS ARE THERE IN 1 meter cube of aluminium. 1
10. corrosion is essentially an electrochemical phenomenon .with the help of diagram explain the reactions occurring during the corrosion of iron. 2
- 11A. can the substance act both as colloid and crystalloid. 1
  - B. WHY HYDROPHILIC SOLS ARE MORE THAN HYDROPHOBIC SOLS 1

12. A. COMMENT " COLLOID IS NOT A SUBSTANCE BUT A STATE OF SUBSTANCE". 1  
B. EXPLAIN WHY DELTAS ARE FORMED WHERE RIVER AND SEA WATER MEET. 1

13. A. WHY IS  $\text{Bi(V)}$  IS STRONGER OXIDISING AGENT THAN  $\text{Sb(V)}$ . 1  
B. DRAW STRUCTURE OF PEROXODISULPHURIC ACID 1

OR

WRITE CHEMICAL EQUATIONS FOR THE FOLLOWING

1. ORTHOPHOSPHORUS ACID IS HEATED.1  
2.  $\text{PTF}_6$  AND XENON ARE MIXED TOGETHER.1
14. UNLIKE PHENOLS, ALCOHOLS ARE EASILY PROTONATED. 2
15. WRITE A SHORT NOTE ON  
A. COUPLING REACTION 1 B. HOFMANN'S BROMIDE REACTION 1
16. ACCOUNT FOR THE FOLLOWING  
A. CHLORINE WATER HAS BOTH OXIDIZING AND BLEACHING PROPERTIES 1  
B. ON ADDITION OF OZONE GAS TO KI SOLUTION, VIOLET VAPOURS ARE OBTAINED. 1
17. HOW WILL YOU DISTINGUISH BETWEEN  
A. ETHYLAMINE AND ANILINE. 1  
B. METHYL AMINE AND DIMETHYLAMINE 1
18. GIVE THE MECHANISM OF PREPARATION OF ETHOXYETHANE FROM ETHANOL 2

### **SECTION -C**

19. A COPPER-SILVER CELL IS SET UP . THE COPPER ION CONCENTRATION IN IT IS 0.10 M. THE CONCENTRATION OF SILVER ION IS NOT KNOWN. THE CELL POTENTIAL MEASURED IS 0.422V DETERMINE THE CONCENTRATION OF SILVER ION IN THE CELL 3
20. DURING A NUCLEAR EXPLOSION ,ONE OF THE PRODUCTS IS  $^{90}\text{Sr}$  WITH THE HALF LIFE OF 28.1 YEARS .IF 1  $\mu\text{g}$  OF  $^{90}\text{Sr}$  WAS ABSORBED IN THE BONES OF A NEWLY BORN BABY INSTEAD OF CALCIUM ,HOW MUCH OF IT WILL REMAIN AFTER 10 YEARS AND 60 YEARS IF IT IS NOT LOST METABOLICALLY. 3(PLEASE REFER QUESTION NO. 17 FROM NCERT FOR PROPER STATEMENT IN TERMS OF SYMBOLS).
21. A. NAME THE METHOD USED FOR REFINING OF  
A. NICKEL 1/2  
B. ZIRCONIUM 1/2
- C THE EXTRACTION OF AU BY LEACHING WITH  $\text{NaCN}$  INVOLVES BOTH OXIDATION AND REDUCTION .JUSTIFY GIVING REACTIONS. 2
- 22.HOW CAN YOU PREPARE  $\text{XeOF}_4$  AND  $\text{XeO}_3$  FROM  $\text{XeF}_6$  . 2

B. HOW ARE INTERHALOGEN COMPOUNDS PREPARED?. 1

23. A. THE HEXAAQUAMANGANESE (II) ION CONTAINS FIVE UNPAIRED ELECTRONS, WHILE THE HEXACYANOMANGANESE(II) IONS ONLY CONTAIN ONE UNPAIRED ELECTRON. EXPLAIN USING CRYSTAL FIELD THEORY. 2

B. WHAT IS BASIS OF FORMATION OF THE SPECTROCHEMICAL SERIES. 1

24. A. WHICH WILL HAVE HIGHER BOILING POINT - 1-CHLOROPENTANE OR 2-CHLORO-2-METHYLBUTANE. 1

B. GIVE REASON: p-nitrochlorobenzene UNDERGOES NUCLEOPHILIC SUBSTITUTION FASTER THAN CHLOROBENZENE. EXPLAIN GIVING RESONATING STRUCTURE AS WELL. 2

25. A. HOW DO YOU EXPLAIN THE AMPHOTERIC NATURE OF AMINO ACIDS. 2

B. WRITE REACTION WHEN GLUCOSE IS TREATED WITH ACETIC ANHYDRIDE. 1

26. WHAT ARE BIODEGRADABLE POLYMER. GIVE AN EQUATION OF BIODEGRADABLE ALIPHATIC POLYESTER (1+1)

B. WHAT IS THE ROLE OF BENZOYL PEROXIDE IN POLYMERISATION OF ETHENE. (1/2)

C. HOW DO YOU EXPLAIN FUNCTIONALITY OF A MONOMER. 1/2

27. CLASSIFY DETERGENTS GIVING AN EXAMPLE IN EACH CASE. 3

OR

A. LOW LEVEL OF NADRENALINE IS THE CAUSE OF DEPRESSION. WHAT TYPE OF DRUGS ARE NEEDED TO CURE THIS PROBLEM?. NAME TWO DRUGS (1/2+1).

B. WHAT IS TINCTURE OF IODINE (1/2)

C. DEFINE CHEMOTHERAPY 1

### **SECTION -D**

28. "THE OSMOTIC PRESSURE OBSERVED WHEN BENZOIC ACID IS DISSOLVED IN BENZENE IS LESS THAN EXPECTED VALUE". COMMENT 2

B. A DECIMOLAR SOLUTION OF POTASSIUM FERROCYANIDE IS 50% DISSOCIATED AT 300K. CALCULATE THE OSMOTIC PRESSURE OF THE SOLUTION. 3

OR

A. DERIVE AN EXPRESSION TO EXPRESS THE RELATIVE LOWERING OF VAPOUR PRESSURE FOR A SOLUTION IS EQUAL TO THE MOLE FRACTION OF THE SOLUTE IN IT WHEN THE SOLVENT ALONE IS VOLATILE. 3

B. THE ELEMENTS A AND B FORM PURELY COVALENT COMPOUNDS HAVING MOLECULAR FORMULA AB<sub>2</sub> AND AB<sub>4</sub>. WHEN DISSOLVED IN 20 G OF BENZENE, 1 g OF AB<sub>2</sub> LOWERS THE FREEZING POINT BY 2.3 K WHEREAS 1 g OF AB<sub>4</sub> LOWERS IT BY 1.3K. THE MOLAL DEPRESSION CONSTANT FOR BENZENE IS 5.1K KG/MOL. CALCULATE THE ATOMIC MASS OF A AND B. 2

29. A. DESCRIBE HOW POTASSIUM DICHROMATE IS MADE FROM CHROMITE ORE AND GIVE THE EQUATIONS FOR THE CHEMICAL REACTION INVOLVED. 2

B. WRITE THE BALANCED IONIC EQUATIONS FOR REACTING IONS TO REPRESENT THE ACTION ACIDIFIED POTASSIUM DICHROMATE ON:

1. POTASSIUM IODIDE SOLUTION 1
2. ACIDIFIED FERROUS SULPHATE SOLUTION. 1

C. GIVE REASON: THE ENTHALPIES OF ATOMISATION OF TRANSITION ELEMENTS ARE HIGH .1

30. AN ORGANIC COMPOUND WITH MOLECULAR FORMULA  $C_9H_{10}O$  ( C-9 ,H-10,O) FORMS 2,4-DNP DERIVATIVE ,REDUCES TOLLENS REAGENT AND UNDERGOES CANNIZZARO REACTION. ON VIGOROUS OXIDATION IT GIVES 1,2-BENZENEDICARBOXYLIC ACID.IDENTIFY THE COMPOUND. 3

.B HOW WILL YOU CONVERT

1. BENZOIC ACID TO M-NITROBENZOIC ACID 1
2. ETHANOL TO ACETONE. 1

BEST OF LUCK FOR YOUR BOARD EXAMS.....

:1 for solution please refer latest ncert book of CHEMISTRY class xii

2 for any details or any confusion or problem in paper you may search me on facebook ..by writing my email id on facebook search girls.r.like.seasons@gmail.com" with name sharanjeet singh....

3 if u like the paper please comment and i will release new question paper in january.....