



Southwestern State College



First Terminal Examination-2081

Grade: XII

Faculty: Science

FM: 75

Subject: Chemistry

SET B

Time: 3 Hrs.

Shift: Day

Name: _____

Candidates are required to answer in their own words as far as practicable. Credit shall be given to clarity and originality, not to rote learning.

Group A

Circle the correct answer

[1x11=11]

- Chloroform is always kept in dark brown bottle. Why?
 - To protect from air
 - To protect from sun light
 - To protect from phosgene
 - To protect from explosion
- When 2-chloro-2-methyl propane reacts with alc.KOH, what will form?
 - 2-methyl propene
 - 2-methyl propane
 - 2-methyl butane
 - 2-methyl butene
- What type of isomers are 2-bromopropane and 1-bromopropane?
 - Chain isomers
 - Functional isomers
 - Metamers
 - positional isomers
- Nucleophilic substitution in 2-chloro-2-methyl butane is
 - SN¹ reaction
 - SN² reaction
 - Both a and b
 - Redox reaction
- Which compound is prepared from Wurtz-Fitting reaction?
 - Bromobenzene
 - Chlorobenzene
 - Iodobenzene
 - Alkyl benzene
- What is equivalent weight of oxalic acid crystal?
 - 45
 - 63
 - 90
 - 126
- 0.315 gram of a dibasic acid required 50 mL of deci-normal sodium hydroxide solution for complete neutralization. What is molecular mass of the acid?
 - 6.3
 - 63
 - 126
 - 163
- Equivalent point of weak acid and strong base titration is found at the pH
 - 7
 - Below 7
 - Above 7
 - 14
- What is the nature of aqueous solution of CH₃COONa?
 - Acidic
 - Basic
 - Neutral
 - Amphoteric
- Rate of chemical reaction is increased by 4 times if concentration of reactant is doubled. What is order of that reaction?
 - zero
 - One
 - Two
 - Three

11. The residue left after the decomposition of white vitriol is reduced with coke, what will form
- a. Zn b. ZnO c. Cu d. CuO

Group 'B'**Attempt all questions.****[5 x 8 = 40]**

12. Write any two methods of preparation of chlorobenzene. How will you convert chlorobenzene into (i) Benzene, (ii) DDT (iii) Toluene [2+3]

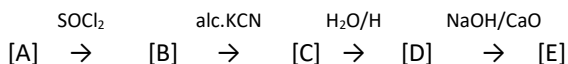
OR

Write an example of each:

- Dehydrogenation of alcohol
 - Anti-Markovnikov's rule
 - Wurtz-fitting reaction
 - Esterification
 - Reimer-Tieman reaction
13. Write laboratory methods of preparation of chloroform from acetone. How will you convert chloroform into chloroform and chloropicrine? [2+3]
14. Define Oxo-process. How will you distinguish ethanol from 2-propanol using Victor Mayer's method? [2+3]
15. Define: (i) Buffer solution (ii) Deci-normal solution
Calculate dissociation constant $[K_a]$ of 0.1 M acetic acid having p^H 5.2. [2+3]
16. Define: (i) Half life time (ii) Rate constant [2+3]
Only 20% reactants of a first order reaction are converted into products in 10 minutes. How long will it take to convert 90% reactants into products?
17. Define primary and secondary standard solution. What mass of KOH is required to prepare 100 ml solution having p^H 11. [2+3]
18. Describe the purification of impure zinc by electrolysis. Write suitable reaction to obtain zinc from white vitriol. [2+3]
19. How is impure mercury extracted from its concentrated ore? Show that mercury is used prepare both calomel as well as corrosive sublimate. [2+3]

Group 'C'**Attempt any all questions****[8x3=24]**

20. a) What are SN^1 and SN^2 reaction mechanism. Give an example each. [3]
b) Consider a reaction:



The compound B is secondary haloalkane that gives propene with alc.KOH. Identify A, B, C, D and E giving complete reaction. [5]

21. a) Define: (i) End point (ii) Equivalent point (iii) Titration error [3]
b) What is the effect of temperature on ionic product of water? The P^H value of a saturated solution of $Mg(OH)_2$ is found to be 11.5 at a certain temperature. Find its molarity. [2+3]
22. a) Define: (i) Salt bridge (ii) Galvanic cell (iii) EMF of cell [3]
b) Design a galvanic cell indicating anode and cathode using $E^\circ_{Al^{+3}/Al} = -1.66V$ and $E^\circ_{Ag^+/Ag} = 0.8V$ respectively.
Write the cell reaction and cell notation. Also calculate its EMF. [2+3]

The End