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**ROLL NO.………………**

**SHRI SHANKARACHARYA VIDYALAYA, BHILAI**

EXAMINATION 2024-2025

**Time Allowed: 1 Hours SUBJECT - CHEMISTRY CLASS – 12TH Maximum marks: 25**

1. The following questions are multiple -choice questions with one correct answer. Each question carries 1

 mark. (1×4)

a. The most reactive nucleophile among the following is
(a) CH3O–
(b) C6H5O–
(c) (CH3)2CHO–
(d) (CH3)3 CO–

b.CH3CH2CHCl CH3 obtained by chlorination of n-butane, will be
(a) meso-form
(b) racemic mixture
(c) d-form
(d) 1-form

c.In Friedel-Crafts synthesis of toluene, reactants in addition to anhydrous AlCl3 are:
(a) C6H6 + CH4
(b) C6H6 + CH3Cl
(c) C5H5Cl + CH3Cl
(d) C6H5/sub>Cl + CH4

d. SN1 reaction of alkyl halides leads to
(a) retention of configuration
(b) racemisation
(c) inversion of configuration
(d) none of these.

2. The following haloalkane are hydrolysed in presence of aq KOH. 2

(a). 1-Chlorobutane (b). 2-chloro-2methyl propane

Which of the above is most likely to give (A) an inverted product (B) a racemic mixture justify your answer.

3. (a). Define the optical isomer giving suitable example. 3

 (b). Among the following pairs which one undergoes SN2 substitution faster. State reasons.

CH2Cl and Cl

4. Write the main products when : 3

 (a). n-butyl chloride is treated with alcoholic KOH

 (b). 2,4,6-nitrochlorobenzene is subjected to hydrolysis

5. Justify and arrange the following compounds of each set in increasing order of reactivity. 3

 (a). 1-Bromobutane , 2-Bromobutane, 2-Bromo-2-methylpropane (SN1 reaction)

 (b). 1- Bromobutane, 2-Bromobutane,2-Bromo-2-methylpropane (SN2 reaction)

6. Write the major product of the following reactions: 3

 Peroxide

(a). CH3-CH2-CH=CH2 + HBr ---------------🡪

 Ethonol

(b). (CH3)3-C-Br + KOH -------------------🡪

(c). CH3-CH­-CH­2-CH3 + NaOH (aq) -------------------🡪

7. How to convert the following : 4

 (a). Prop-1-ene to 1 –fluropropane

 (b). Chlorobenzene to 2 – chlorotoluene

 (c). Bromoethane to Butane

 (d). But-1-ene to 2 Bromo butane

 (e). Benzene to chlorobenzene

8. Explain the following question; 3

(a). Write the help of resonating structures explain the effect of presence of nitro group ot

 ortho position in chlorobenzene.

(b). Grignard reagent should be prepared under anhydrous conditions.

 (c). which one has greater boiling point & why?

 1-Bormo butane , 2-Methyl prop-2-ol