Class: XII
Time: 1Hr.

BANASTHALI PUBLIC SCHOOL
UNIT TEST-I, SESSION:2025-26

Sub: Chemistry (043)
M.M.: 25

General Instructions:

1. The question paper has 11 questions. All questions are compulsory.
2. Q. No. 1 and 2 are MCQs of 1 mark each.
3. Q. No. 3 and 4 are Assertion & Reasoning based questions of 1 mark each.
4. Q. No. 5 to 7 are Very Short answer type questions of 2 marks each.
5. Q. No. 8 and 9 are Long answer type questions of 3 marks each.
6. Q. No. 10 is Case Based question of 4 marks.
7. Q. No. 11 is Long answer type question of 5 marks.

Q1. Which of the following is allyl halide : (1)

(a) C6H5CH2Cl (b) C6H5CH(CH3)Cl
(c) CH2=CHCl (d) C6H5CH=CHCH2Cl

Q2. Which of the following is suitable test to detect Phenol : (1)

(a) Sodium-bicarbonate Test (b) Sodium carbonate Test
(c) Lucas Test (d) Neutral Ferric Chloride Test

Q. No. 3 and 4 are **ASSERTION & REASONING** based questions. Mark the correct choice as:

(a) Both **A** and **R** are True, and **R** is the correct explanation for **A**.
(b) Both **A** and **R** are True, but **R** is not the correct explanation for **A**.
(c) **A** is True, but **R** is False.
(d) **A** is False, but **R** is True.

Q3. **Assertion(A):** Nucleophilic substitution of iodoethane is easier than chloroethane. (1)
Reason(R): Bond enthalpy of C-I bond is less than C-Br bond.

Q4. **Assertion(A):** Presence of methoxy group on para-position of Phenol decreases its acidic character (1)
Reason(R): Methoxy group gives more stability to phenoxide ion.

Q5. Draw resonating structure of chlorobenzene or phenol. (2)

Q6. Give suitable test to distinguish 1°, 2° and 3° alcohols. Give chemical reaction also. (2)

Q7. How will you prepare salicylic acid from phenol? Give chemical reaction also. (2)

Q8. What happens when (give chemical reaction only): (3)

(a) Phenol is treated with Zn dust
(b) Phenol is treated with Br2, in aqueous medium
(c) Phenol is treated with conc. HNO_3

Q9. Give chemical reactions to show what happens when isopropyl chloride reacts with: (3)

(a) Aqueous KOH (b) Alcoholic KOH (c) SOCl2

CASE – STUDY (1x4=4)

Q10. The nucleophilic substitution in alkyl halides can take place through two different mechanisms, SNI and SN2. The SNI mechanism involves carbocation as intermediate while SN2 reaction occurs through a single-step concerted mechanism involving a transition state. Based on above information, answer the following:

(a) What is the order of reactivity of 1°, 2°, 3° alkyl halides towards SNI mechanism?
(b) What is the order of reactivity of 1°, 2°, 3° alkyl halides towards SN2 mechanism?
(c) Out of SN1 and SN2, which mechanism involves inversion of configuration ?
(d) Out of SN1 and SN2, which mechanism involves racemization ?

Q11. (a) Fill in the blanks: (2+3=

(i) CH3-CH2-Cl + KCN → _____
(ii) (CH3)3-C-O-CH3 + HI(hot and conc.)→ _____

(b) Write three steps mechanism of acidic dehydration of ethanol to form ethene.