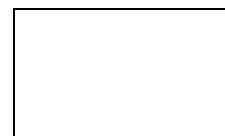


UEC TRIAL EXAMINATION (2010)
Senior Middle level
CHEMISTRY



Date: 28th. september

Time Limit: 2 hours

Name: [] [] [] Seat no: () Student number:

_____ Class: Sc ()

Answer Sheet

PAPER 1 MULTIPLE -CHOICE QUESTIONS (40%)

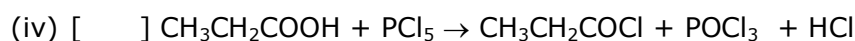
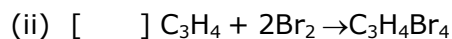
| | | | | | |
|----|-----------------|-----|-----------------|-----|-----------------|
| 1. | (A) (B) (C) (D) | 8. | (A) (B) (C) (D) | 15. | (A) (B) (C) (D) |
| 2. | (A) (B) (C) (D) | 9. | (A) (B) (C) (D) | 16. | (A) (B) (C) (D) |
| 3. | (A) (B) (C) (D) | 10. | (A) (B) (C) (D) | 17. | (A) (B) (C) (D) |
| 4. | (A) (B) (C) (D) | 11. | (A) (B) (C) (D) | 18. | (A) (B) (C) (D) |
| 5. | (A) (B) (C) (D) | 12. | (A) (B) (C) (D) | 19. | (A) (B) (C) (D) |
| 6. | (A) (B) (C) (D) | 13. | (A) (B) (C) (D) | 20. | (A) (B) (C) (D) |
| 7. | (A) (B) (C) (D) | 14. | (A) (B) (C) (D) | | |

PAPER 2 (60%)

SECTION A COMPULSORY QUESTIONS (24%)

(Attempt all the six questions in this section)

1. Match the organic reaction with the types of reaction. [1%×4]



①addition

②substitution

③esterification

④elimination

2. The following descriptions concerning concentrated sulphuric acid. State True (T) or False (F). [1%×4]

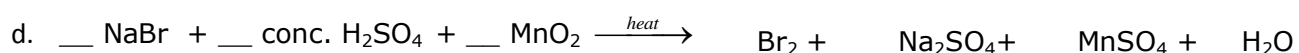
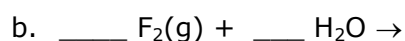
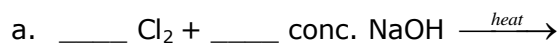
a. [] Chlorine gas is produced when concentrated sulphuric acid is heated with sodium chloride.

b. [] When concentrated sulphuric acid is heated with copper, a blue solution and a colorless gas with choking smell is produced.

c. [] When concentrated sulphuric acid is heated with ethanol, only alkene will be formed.

d. [] concentrated sulphuric acid is used to dry hydrogen sulphide gas.

3. Complete and balance the following equations: [1%×4]



4. Complete table below. [1%×4]

| Structural formula of organic compound | Reagent | observation |
|--|--------------------------------------|---|
| C ₆ H ₅ OH | Iron (III) chloride solution | |
| | Sodium hydroxide and iodine solution | CH ₃ CH ₂ COONa and yellow precipitate of iodoform, CHI ₃ is observed. Molecular formula of the organic compound is C ₄ H ₈ O. |
| CH ₃ COOH | | Limewater turns milky. |
| CH ₃ CH=CHCH ₃ | Bromine in tetrachloromethane | |

5. For the reaction: A (g) + B(g) → C(g) + D(g)
The following experimental data were obtained.

| experiment | Initial [A] (mol L ⁻¹) | Initial [B] (mol L ⁻¹) | Initial reaction rate (mol L ⁻¹ sec ⁻¹) |
|------------|------------------------------------|------------------------------------|--|
| 1 | 0.033 | 0.034 | 6.67 × 10 ⁻⁴ |
| 2 | 0.034 | 0.137 | 1.08 × 10 ⁻² |
| 3 | 0.136 | 0.136 | 1.07 × 10 ⁻² |
| 4 | 0.202 | 0.233 | Y |

a. Determine the order of reaction with respect to reactant A. [1%]

b. Determine the order of reaction with respect to reactant B. [1%]

c. Write the rate law for the reaction. [1%]

d. Calculate the initial reaction rate, Y, for the experiment 4. [1%]

6. Answer the following questions. [2%×2]

a. Solid potassium oxide is added to water. If a few drops of phenolphthalein are added to the resulting solution, what would be observed? Explain.

b. At 200°C and 1.01×10⁵ Pa. 1.4g of nitrogen and 4.0g of argon are mixed. Calculate the volume of gas mixture in liter, L. [N=14, Ar=40; R=8.314Jmol⁻¹K⁻¹]

