TEST-B

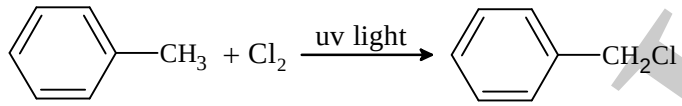
SOLVED

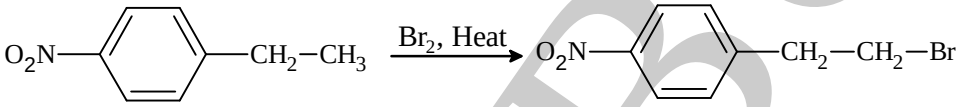
Time: 1 hr. **Max. Marks: 30**

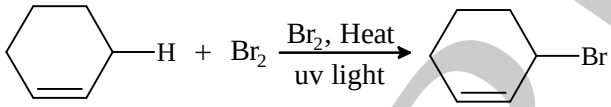
SECTION-A

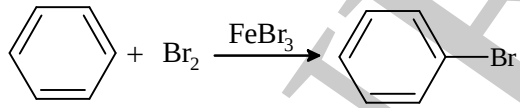
Tick the correct option:

1. Which of the following reaction is wrongly written? **[1]**

(i) 

(ii) 

(iii) 

(iv) 

2. In the reaction $CH_3-CH=CH_2+H-Cl \xrightarrow[\text{peroxide}]{\text{Benzoyl}}$ the intermediate is **[1]**

(a) $CH_3-\overset{+}{C}H-CH_3$ (ii) $CH_3-CH_2-\overset{+}{C}H_2$

(iii) $CH_3-\underset{\underset{Cl}{|}}{CH}-\overset{\bullet}{C}H_2$ (iv) $CH_3-\overset{\bullet}{C}H-\underset{\underset{Cl}{|}}{CH_2}$

3. Choose the incorrect statement: **[1]**

(i) In S_N1 reaction, optically active substrate gives an optically inactive.

(ii) In S_N1 reaction, the rate determining step is the formation of carbocation.

(iii) S_N2 reaction involving optically active substrate results in the retention of configuration.

(iv) In S_N2 reaction the rate of reaction depends on the concentration of the haloalkane as well as on the concentration of the incoming nucleophile.

Assertion-Reason type Questions:

(i) If assertion and reason both are correct and reason is the correct explanation of assertion.

(ii) If assertion and reason both are correct and reason is not the correct explanation of assertion.

(iii) If assertion is correct and reason is wrong.

(iv) If assertion is wrong and reason is correct.

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4. Assertion: Neo pentane on monochloroination in the presence of bright sunlight gives one enantiomeric pair. **[1]**

   Reason: Monochlorination in sunlight follows free radical mechanism.

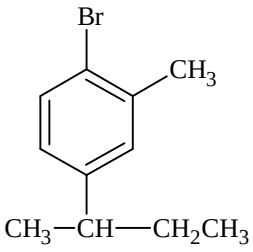
5. Assertion: Haloarenes do not forms Grignard reagent on reaction with magnesium. **[1]**

   Reason: The C – X bond in haloarenes has a partial double bond character due to resonance.

One word /One Sentence type Questions.

6. Out of $C_6H_5CH_2Cl$ and $C_6H_5CHClC_6H_5$, which is more easily hydrolysed by KOH and why? **[1]**

7. Write IUPAC name of the following compound: **[1]**



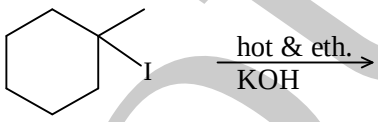
SECTION-B

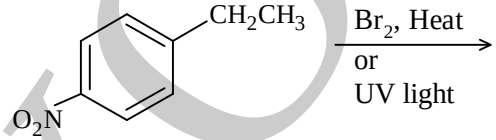
8. Arrange the following in order of increasing property: **[2]**

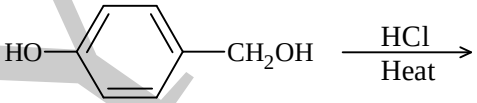
   (i) 1-chloropropane, isopropyl chloride, 1-chlorobutane (**boiling point**).

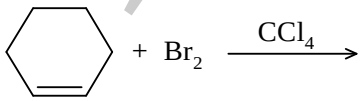
   (ii) 1-Bromo-3-methyl butane, 2-Bromo-2-methyl butane, 2-Bromo-3-methyl butane (**reactivity towards S_N2**).

9. Write the structure of the major product in each of the following: **[2]**

(i) 

(ii) 

(iii) 

(iv) 

10. Explain why: **[2]**

    (i) Alkyl halides though polar, are immiscible in water.

    (ii) p-dichlorobenzene has a higher melting point and lower solubility than those of o-and m-dichlorobenzene.

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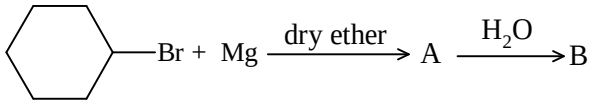
11. How the following conversion can be carried out? **[3]**

(i) Ethanol to propane nitrile

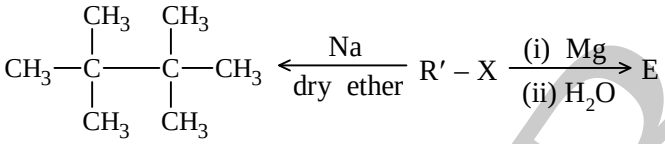
(ii) Toluene to benzyl alcohol

(iii) Ethanol to pent-2-yne.

12. Identify A, B, C, E, R and R′ in the following: **[3]**

(i) 

(ii) $R - Br + Mg \xrightarrow{\text{dry ether}} C \xrightarrow{D_2O} CH_3 - \underset{\underset{D}{|}}{CH} - CH_3$

(iii) 

13. Account for the following: **[3]**

(i) Halogen atom attached to benzene ring is ortho and para directing but deactivating in nature.

(ii) Chloromethane on reaction with KCN form ethanenitrile as the main product and with AgCN to form methyl isocyanide as the chief product.

(iii) Conc. H_2SO_4 is not used during the reaction of alcohol with KI.

14. (a) Write four points to distinguish between S_N1 and S_N2 reaction. **[3]**

(b) Write a short note on Fittig reaction.

15. (a) Propene on reaction with HCl in the presence of benzoyl peroxide gives a product (A). (A) on reaction with sodium and dry ether form (B). Monochloronation of (B) with Cl_2 in the presence of light gives two product (C) and (D). Write the structures of (A) to (D).

Write all chemical reactions involved.

(b) Convert 2-chloropropane into 1-nitropropane

(c) Which is more reactive towards nucleophilic substitution reaction and why?

$CH_3 - Br$ or $CH_3 - I$. **[3+1+1]**

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