

## NAT I Engineering Chemistry

| Sr | Questions                                                                                | Answers Choice                                                                                                                                                                     |
|----|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Carbon atom holding halogen in aryl halides is                                           | <p>A. <math>sp^2</math>-hybridised</p> <p>B. <math>sp^3</math>-hybridised</p> <p>C. <math>sp</math>-hybridised</p> <p>D. <math>sp^2</math>-hybridised</p>                          |
| 2  | Which of the following reagent cannot be used for preparing alkyl chloride from alcohol? | <p>A. <math>HCl + anhyd. ZnCl_2</math></p> <p>B. <math>NaCl</math></p> <p>C. <math>PCl_5</math></p> <p>D. <math>SOCl_2</math></p>                                                  |
| 3  | Octane number can be changed by                                                          | <p>A. Isomerisation</p> <p>B. Alkylation</p> <p>C. Cyclisation</p> <p>D. All of these</p>                                                                                          |
| 4  | The treatment of benzene with isobutene in the presence of sulphuric acid give           | <p>A. Isobutyl benzene</p> <p>B. Tert-Butyl benzene</p> <p>C. n-Butyl benzene</p> <p>D. no reaction</p>                                                                            |
| 5  | Which of the following species participate in sulphonation of benzene ring?              | <p>A. <math>H_2SO_4</math></p> <p>B. <math>HSO_3^-</math></p> <p>C. <math>SO_3</math></p> <p>D. <math>SO_2</math></p>                                                              |
| 6  | Heating a mixture of sodium benzoate and soda lime gives                                 | <p>A. Benzene</p> <p>B. Methane</p> <p>C. Sodium benzoate</p> <p>D. Calcium benzoate</p>                                                                                           |
| 7  | Benzene is obtained by fractional distillation of                                        | <p>A. Heavy oil</p> <p>B. Anthracene oil</p> <p>C. Middle oil</p> <p>D. Light oil</p>                                                                                              |
| 8  | Which species represents the electrophile in aromatic nitration?                         | <p>A. <math>NO_2</math></p> <p>B. <math>NO_2^+</math></p> <p>C. <math>NO_2^-</math></p> <p>D. <math>NO</math></p>                                                                  |
| 9  | Benzene + Ozone $\rightarrow$ Y. in this sequence Y is                                   | <p>A. Benzene monoozonide</p> <p>B. Benzene diozonide</p> <p>C. Benzene triozone</p> <p>D. Succinic acid</p>                                                                       |
| 10 | Most common reactions of benzene and its derivatives are                                 | <p>A. Electrophilic addition reactions</p> <p>B. Electrophilic substitution reactions.</p> <p>C. Nucleophilic addition reactions</p> <p>D. Nucleophilic substitution reactions</p> |