

14-08-15_Sr.IPLCO_JEE-Main_RPTM-3_Syllabus

Mathematics:

Ellipse And Hyperbola In Standard Form, Their Foci, Directrices And Eccentricity,
Parametric Equations, Equations Of Tangent And Normal, Locus Problems

Physics:

W.P.E& Circular Motion

Chemistry:

Benzene: Preparation, Reactions, Electrophilic aromatic substitution,

Alkyl halides, Haloarenes: Preparation, properties and reactions

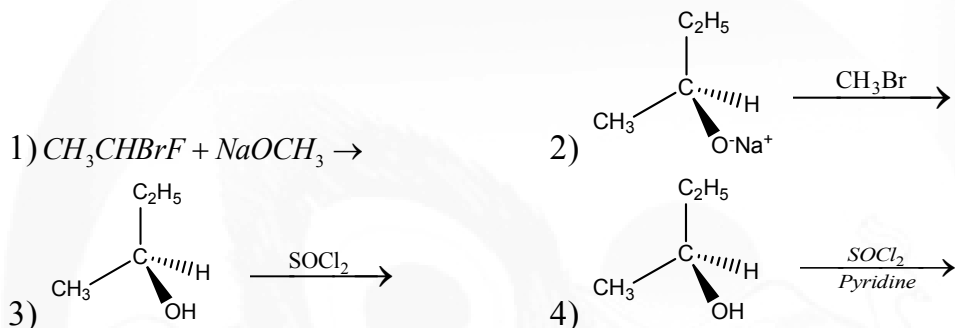
CHEMISTRY

31. The name of the intermediate formed during nucleophilic substitution taking place in haloarenes is
- 1) wheland intermediate 2) Meisenheimer complex
3) Arenium ion 4) Carbocation
32. Which of the following is most reactive towards SN_2 reaction with I^-
- 1) benzyl chloride 2) allyl chloride
3) $C_6H_5COCH_2Cl$ 4) Methyl chloride
33. p-nitro fluoro benzene is treated with the following nucleophile separately in methanol at $25^\circ C$. With which nucleophile substitution takes place fast ?
- 1) CH_3O^- 2) $C_6H_5S^-$ 3) $C_6H_5O^-$ 4) $C_6H_5NH_2$
34. The following compounds are treated with piperidine in methanol at $0^\circ C$. Which is more reactive towards nucleophilic substitution ?
- 1) 2,4-dinitro fluoro benzene 2) 2,4-dinitro chlorobenzene
3) 2,4-dinitro bromo benzene 4) 2,4-dinitro iodo benzene

35. In which of the following reactions, primary hydrogen isotopic effect appears ?

- 1) E_1 2) E_2 3) E_1 cb 4) all

36. Identify the reaction in which there is inversion of configuration.



37. Which of the following is more reactive than benzene towards nitration ?

- 1) $C_6H_5B(OH)_2$ 2) $C_6H_5N^+(CH_3)_3$ 3) $C_6H_5-C_6H_5$ 4) $C_6H_5NO_2$



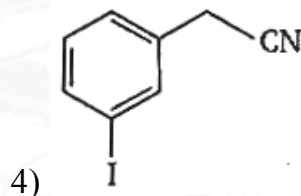
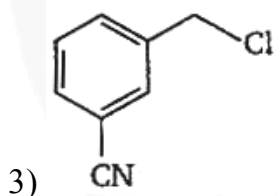
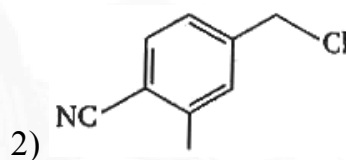
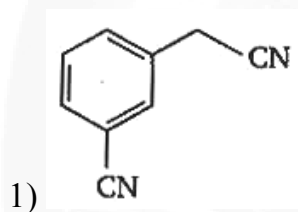
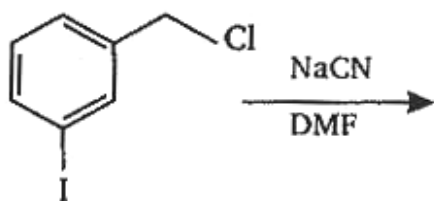
38. Furan is subjected to Friedel-Craft alkylation at which place the reaction takes place more rapidly.

- 1) at C_2 2) at C_3
3) with the same rate at C_2 and C_3 4) at C_4

39. In which of the following the electrophile enters m-position ?

- 1) $C_6H_5-CH_2CH_2CN$ 2) $C_6H_5CH=CH-CN$
3) $C_6H_5N=O$ 4) $CH_3COOC_6H_5$

40. The structure of the major product formed in the following reaction is



41. All the 4 halobenzenes are separately subjected to nitration. All are o,p-orienting. The ortho/para ratio will be least with

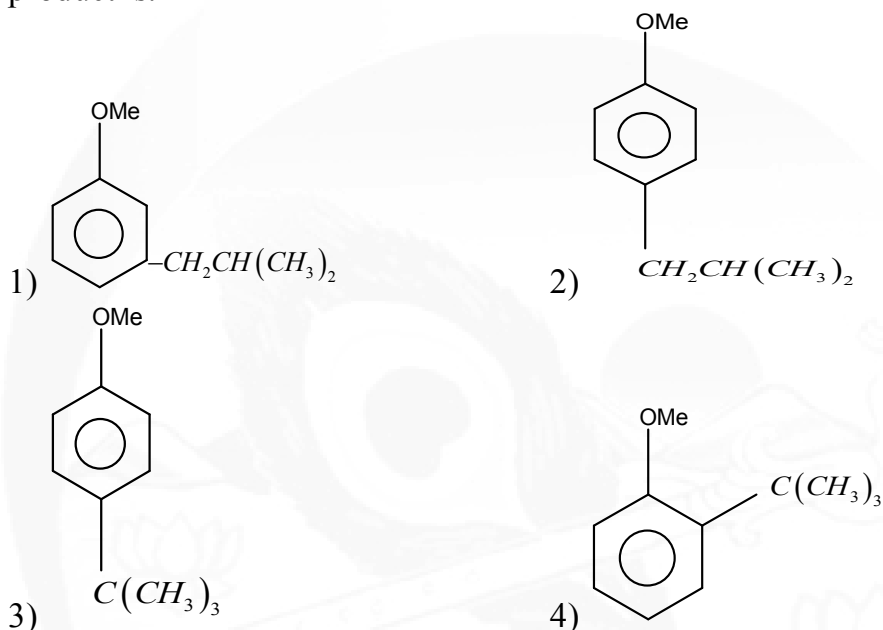
1) fluoro benzene

2) chloro benzene

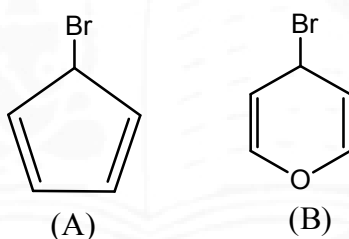
3) bromo benzene

4) iodobenzene

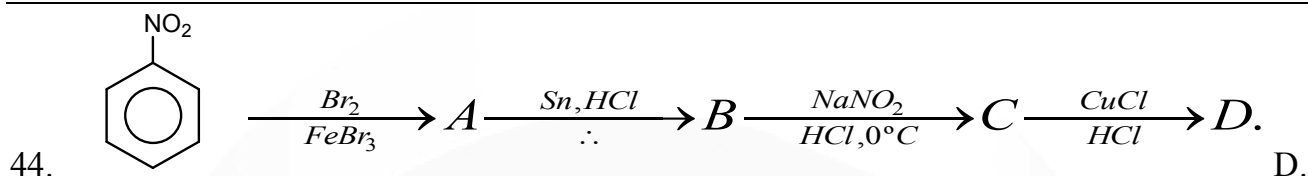
42. Anisole is treated with 1-chloro-2-methyl propane in presence of AlCl_3 . The major product is.



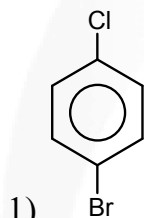
43. Which of the following statements is correct regarding the rate of hydrolysis of A and B in SN_1 reaction ?



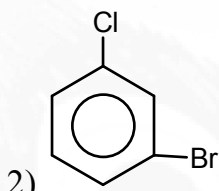
- 1) A is more reactive than B 2) B is more reactive than A
3) A and B react at the same rate 4) Neither A nor B



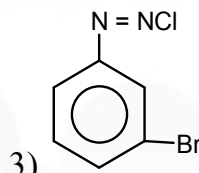
is



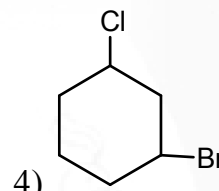
1)



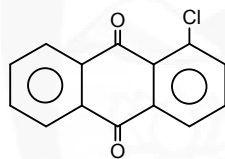
2)




3)



4)



45.  1-chloro anthraquinone is treated with CH_3O^- . 1-methoxy anthraquinone is formed. The mechanism is

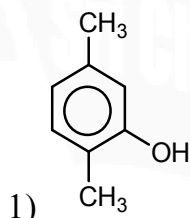
1) SN_1

2) SN_2

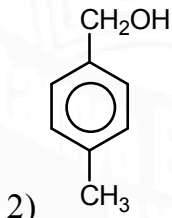
3) addition –elimination

4) elimination-addition

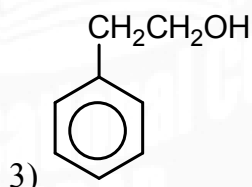
46. An organic compound with the formula $C_8H_{10}O$ on heating with $I_2 / NaOH$ gives a yellow precipitate it is



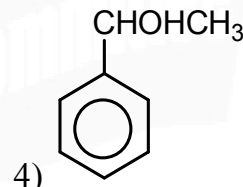
1)



2)



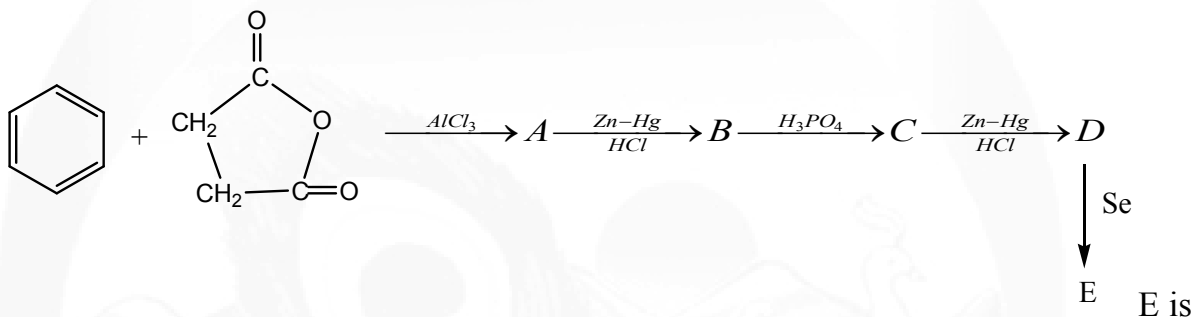
3)



4)

47. Which of the following is more reactive towards nitration ?

- 1) fluoro benzene 2) chloro benzene
3) bromobenzene 4) iodobenzene



48.

- 1) tetrahydro naphthalene 2) naphthalene
- 3) decahydro naphthalene 4) n-butyl benzene

49. Which of the following is more reactive towards SN^1 reaction with aqueous-ethanol?

- 1)
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{Cl} \end{array}$$
- 2) $\text{C}_6\text{H}_5 - \text{CH} = \text{CH} - \text{CH}_2 - \text{Cl}$
- 3)
$$\begin{array}{c} \text{C}_6\text{H}_5 - \text{C} - \text{CH}_2\text{Cl} \\ || \\ \text{O} \end{array}$$
- 4)
$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{C} = \text{CH} - \text{CH}_2\text{Cl} \end{array}$$

50. S-2-bromo propanoic acid is treated with dil NaOH in presence of Ag_2O . The product is.

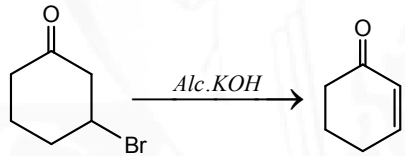
- 1) R-lactic acid
- 2) A mixture of R and S lactic acids
- 3) S-lactic acid
- 4) An ether.

51. $CH_3CH_2CH_2CH_2Cl \xrightarrow[t \text{ butyl alcohol } 40^\circ C]{t\text{-butoxide}}$ the major product is

- 1) pent-2-ene
- 2) 1-tert butoxy pentane
- 3) 2-tert butoxy pentane
- 4) pent-1-ene

52. Meso-1,2-dibromo-1,2-diphenyl ethane is treated with alc KOH the major product is.

- 1) trans-1-bromo,1,2-diphenyl ethene
- 2) cis-1-bromo-1,2-diphenyl ethene
- 3) 1,2-diphenyl ethylene glycol
- 4) 1,2-diphenyl ethane

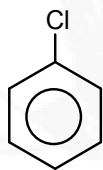
53.  The mechanism is

- 1) E_2
- 2) E_1
- 3) $E_1 Cb$
- 4) Depends on temperature

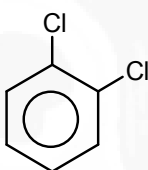
54. The group which exerts +I effect when connected to benzene ring but does not exert either +M or -M is.

- 1) $-N^+H_3$ 2) Br 3) OH 4) $-C_2H_5$

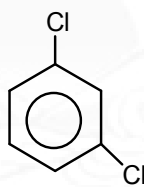
55. Which of the following would produce three isomeric products when one more substituent is introduced ?



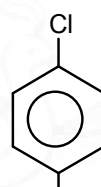
P



Q



R



S

- 1) P,Q,R 2) P 3) Q and S 4) P and R

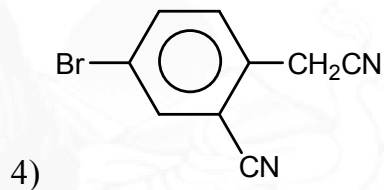
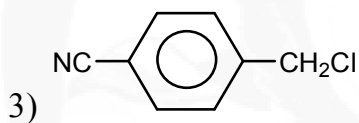
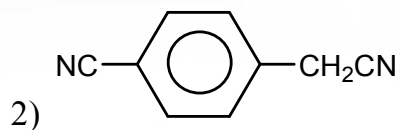
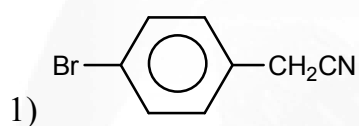
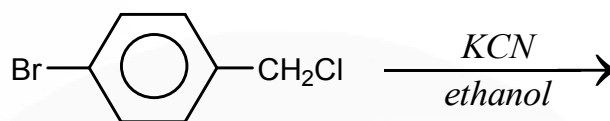
56. $C_6H_5N=N^+Cl$ is treated with H_3PO_2 / H_2O . The product is

- 1) phenol 2) chloro benzene 3) benzene 4) biphenyl

57. Benzene is treated with $HCHO + HCl$ in presence of $ZnCl_2$. The product formed is

- 1) formaldehyde 2) benzyl chloride 3) chloro benzene 4) benzaldehyde

58. Which of the following is correct product of the reaction given



59. Chlorobenzene is prepared commercially by

- 1) Dows process 2) Hunsdiecker process
3) Sandmeyer reaction 4) Raschig process

60. Which of the following does not give benzoic acid on oxidation with alkaline $KMnO_4$

- 1) Toulene 2) Ethyl benzene
- 3) Tert butyl benzene 4) isopropyl benzene