

17340

21819

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Answer any TEN of the following:** **20**
- State any two applications of toluene.
 - Write any two physical properties of chlorobenzene.
 - How will you prepare chlorobenzene by Sandmeyer's reaction? Write the complete balanced equation.
 - Distinguish between aromatic and aliphatic compounds (two points).
 - Write any two uses of benzene sulphonic acid.
 - Explain the nomenclature of aromatic sulphonic acids.
 - How would you prepare aniline from chlorobenzene?
 - Write any two applications of aniline.
 - Define diazotization with an example.
 - Write precautions to be taken in diazotization.
 - Describe nomenclature of phenols.

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- l) Write any two uses of benzoic acid.
- m) Explain resonating structure of naphthalene.
- n) Write any two roles of fused ring compounds in the preparation of intermediates.

2. Answer any **FOUR** of the following:

16

- a) Explain the following properties of benzene with chemical reaction:
 - (i) Sulphonation.
 - (ii) Nitration.
- b) Explain the action of chlorine on toluene in presence of UV light and iron catalyst. Write the reaction involved.
- c)
 - (i) Explain sulphonation of benzene sulphonic.
 - (ii) Write its two applications.
- d) Explain following chemical properties of aniline:
Reaction with:
 - (i) HCL
 - (ii) Benzaldehyde
 - (iii) Oxidation
 - (iv) Alkyl halide.
- e) Write the industrial applications of benzene diazonium chloride.
- f) Write any four chemical properties of phenol.

3. Attempt any FOUR of the following:**16**

- a) Draw the structures of mono, di and tri substituted nitro derivatives of benzene and write their IUPAC names.
- b) (i) How would you prepare nitrobenzene from aniline? Write the steps with chemical reaction.
(ii) Explain as to we cannot oxidize aniline directly.
- c) How would you prepare phenol from:
(i) Cumene
(ii) Chlorobenzene
Write the balanced chemical equation for both.
- d) What happens when benzoic acid:
(i) Reacts with ethyl alcohol
(ii) Reacts with thionyl chloride.
(iii) Reacts with fuming H_2SO_4
(iv) Reacts with chlorine in presence of ferric chloride..
Write the chemical reactions for all the above reactions.
- e) Which are the dyes prepared from anthracene? Illustrate with reaction.
- f) Explain with chemical reaction, hydroxylation of naphthaline.

4. Answer any FOUR of the following:**16**

- a) How would you prepare benzene from benzene diazonium chloride? State any two applications of benzene.
- b) (i) How would you prepare benzene sulphonic acid from benzene?
(ii) State any four physical properties of benzene sulphonic acid.
- c) Write the application of phenol in preparation of dye intermediate.
- d) Write any four applications of benzoic acid.

- e) (i) Explain with chemical reaction sulphonation of naphthalene.
(ii) Name the product formed. State two uses of naphthalene.
- f) Explain giving chemical reaction preparation of dye intermediate from naphthalene.

5. Answer any FOUR of the following: 16

- a) (i) Explain sulphonation of toluene with chemical reaction.
(ii) State two physical properties of toluene.
- b) Write any four industrial applications of chlorobenzene.
- c) Explain the reduction of nitrobenzene in both acidic and alkaline medium with chemical reactions. Name products formed.
- d) Explain the nomenclature rules for aniline. (Aromatic amine.)
- e) Explain resonating structures of anthracene.
- f) Explain with chemical reaction: sulphonation and chlorination of anthracene.

6. Attempt any FOUR of the following: 16

- a) State any four physical properties of nitrobenzene and comment on its typical odour.
- b) Explain following chemical properties of benzene diazonium chloride and predict the names of the products:
(i) Reaction with phenol
(ii) Reaction with aniline.
- c) How would you prepare thiophenol and anisole from benzene diazonium chloride?
- d) Write any four physical properties and two uses of phenol
- e) Draw structures and IUPAC names for the following:
(i) Salicylic acid
(ii) O-nitrobenzoic acid.
- f) (i) Define coaltar. Describe?
(ii) Coal tar distillation method for the preparation of naphthalene.
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