



17340

15162

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) Assume suitable data, if **necessary**.
(5) Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.

	Marks
1. Attempt any ten :	20
a) Distinguish between aliphatic and aromatic compounds (any two points).	(2)
b) Write two physical properties and uses of benzene.	(2)
c) How will you prepare chlorobenzene using :	
i) PCl_5	
ii) Cu_2Cl_2 as catalyst ?	(2)
d) Write applications of chlorobenzene .	(2)
e) How will you prepare aniline from nitrobenzene ? Write chemical reaction for the same.	(2)
f) Predict the names of the products obtained by sulphonation and nitration of aniline. Draw their structures.	(2)
g) How will you prepare benzene diazonium chloride ?	(2)
h) What will happen if benzene diazonium chloride react with CuCN and CuBr ?	(2)
i) Write physical properties of phenol.	(2)
j) Phenols are acidic. Prove the statement with suitable chemical reaction.	(2)
k) Draw the structure of salicylic acid and phthalic acid.	(2)
l) Write applications of benzoic acid.	(2)
m) What are Fused ring compounds ? Write any two examples of same.	(2)
n) How will you prepare anthracene ?	(2)

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**Marks****2. Attempt any four :****16**

- a) How will you extract phenol and cresol from light oil ? Explain with the help of suitable chemical reactions. (4)
- b) Write physical properties and uses of chlorobenzene. (4)
- c) Explain following chemical properties of benzene sulphonic acid.
 - i) Reaction with NaOH
 - ii) Br₂ water
 - iii) Thionyl chloride
 - iv) HNO₃. (4)
- d) Draw the structures of mono, di and trisubstituted nitro derivatives of benzene and write their IUPAC names. (4)
- e) What will happen if aniline undergo
 - i) oxidation
 - ii) halogenation ?Explain with chemical reactions. (4)
- f) How will you prepare naphthalene ? Show its resonating structures. (4)

3. Attempt any four :**16**

- a) How will you prepare benzene from
 - i) Acetylene
 - ii) Phenol ?Explain with the help of chemical reactions. (4)
- b) Predict the products of following chemical reactions :
 - i) reaction of chlorobenzene with NH₃
 - ii) reaction of chlorobenzene with KOH
 - iii) reaction of chlorobenzene with HNO₃ and
 - iv) with H₂SO₄ (4)
- c) Explain sulphonation of benzene sulphonic acid. Write applications of benzene sulphonic acid. (4)
- d) What will happen if reduction of nitrobenzene is carried in
 - i) alkaline medium
 - ii) acidic medium ? (4)
- e) How will you prepare aniline from chlorobenzene ? Write physical properties of chlorobenzene. (4)
- f) Predict the products when anthracene is treated with
 - i) Br₂ in presence of CCl₄
 - ii) HNO₃ in acetic anhydride
 - iii) H₂SO₄. (4)

**4. Attempt any four :****16**

- a) Predict the product of following reactions giving chemical equation. Reaction of toluene with
- i) HNO_3
 - ii) CH_3Cl
 - iii) H_2SO_4 . (4)
- b) Explain following chemical properties of aniline. Reaction with
- i) HCl
 - ii) Alkylhalide
 - iii) Benzaldehyde
 - iv) Oxidation. (4)
- c) How will you prepare benzene and phenol from benzene diazonium chloride ? Explain with the help of chemical reactions. (4)
- d) Explain Reimer-Tiemann reaction. (4)
- e) How will you prepare benzoic acid from toluene ? (4)
- f) Explain following chemical properties of naphthalene :
- i) Sulphonation
 - ii) Nitration
 - iii) Halogenation
 - iv) Hydroxylation. (4)

5. Attempt any four :**16**

- a) Explain following properties of toluene :
- i) Oxidation
 - ii) Chlorination.
- Write chemical reactions. (4)
- b) How will you prepare thiophenol and anisole from benzene diazonium chloride ? (4)
- c) What is Fries rearrangement ? Explain with chemical reaction. (4)
- d) How will you prepare sodium benzoate and ethyl-benzoate from benzoic acid ? (4)
- e) Write physical properties of anthracene and naphthalene. (4)
- f) Naphthalene is used for preparation of dye intermediate. Explain giving chemical reactions. (4)

**6. Attempt any four :**

- a) How will you prepare :
 - i) Nitrobenzene
 - ii) Benzene sulphonic acid
 - iii) Toluene
 - iv) Acetophenone from benzene. (4)
 - b) Explain following chemical properties of benzene diazonium chloride and predict the names of the products. (4)
 - i) reaction with aniline
 - ii) reaction with phenol.
 - c) Explain bromination of phenol in presence of
 - i) FeBr_3 catalyst and
 - ii) CS_2 catalyst. (4)
 - d) What will happen if
 - i) benzoic acid undergo reduction in presence of LiAlH_4
 - ii) undergo decarboxylation in presence of CaO/NaOH ? (4)
 - e) Show resonating structures of anthracene. Write its applications. (4)
 - f) Which dyes are prepared from anthracene ? Explain giving suitable examples. (4)
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