



17312

14115

3 Hours/100 Marks

Seat No.

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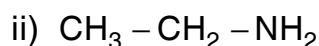
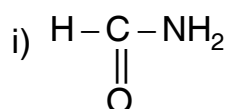
- Instructions :**
- (1) **All** questions are **compulsory**.
 - (2) Answer **each** next main question on a **new** page.
 - (3) **Illustrate** your answers with neat sketches **wherever** necessary.
 - (4) Figures to the **right** indicate **full** marks.
 - (5) **Assume** suitable data, if **necessary**.
 - (6) **Use** of Non-programmable Electronic Pocket Calculator is **permissible**.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.
 - (8) **Use** of Steam tables, logarithmic, Mollier's chart is **permitted**.

MARKS

1. Attempt **any ten** of the following :

20

a) State the functional groups in the following cases :



- b) Write the general combustion reaction for alkanes.
- c) Define indicators and give two examples of each.
- d) Give the classification of alcohol based on number of hydroxyl groups.
- e) Give the reaction only for preparation of benzene from phenol.
- f) State Raoult's law.
- g) Write the combustion reaction for Benzene.

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- h) Write the IUPAC names for :
- i) Formaldehyde
 - ii) Acetic acid.
- i) What are aromatic hydrocarbons ?
- j) State two homologues for benzene.
- k) What do you mean by vicinal dihalides ?
- l) Write the reaction for catalytic hydrogenation of alkynes.

2. Attempt **any four** of the following :

16

- a) Define vapor pressure. What are the factors on which vapor pressure depends ?
- b) Give the IUPAC rules for naming of monofunctional compounds.
- c) Give any two methods of preparation of alcohol.
- d) Differentiate between saturated and unsaturated hydrocarbons.
- e) How is cyclohexane prepared from benzene ?
- f) Explain Ostwald's ionisation theory.

3. Attempt **any four** of the following :

16

- a) Define organic compound and state any two functional groups.
- b) What is Grignard's Reagent. Give the reaction to manufacture methane from Grignard's reagent ?
- c) Write the Friedel-Crafts reaction and Wurtz-Fittig reaction for manufacture of Toluene.



- d) Write the following reaction for phenol :
 - i) Sulphonation
 - ii) Halogenation.
- e) State four uses of phenol.
- f) Distinguish between ideal and non-ideal solutions.

4. Attempt **any four** of the following :

16

- a) Explain Quinonoid theory for indicators.
- b) Differentiate between organic and inorganic compounds.
- c) State two physical properties and two uses of alkanes.
- d) Write the reaction for action of Halogen acid on Acetylene.
- e) Give the Nitration reaction for Benzene for all conditions.
- f) Explain the two types of aromatic hydroxy compounds.

5. Attempt **any four** of the following :

16

- a) Explain theory of hydrogen ion indicator with suitable example.
- b) What are minimum boiling azeotropes and maximum boiling azeotropes. Give examples.
- c) Give the reaction for :
 - i) action of sodium metal on alcohol
 - ii) action of acetic acid on alcohol.
- d) State two physical properties and two uses of phenol.
- e) Give any two methods of preparation of alkenes.
- f) Give the classification of carbon atoms.



6. Attempt **any four** of the following :

16

- a) Explain pyrolysis of alkane.
 - b) Give the reaction for
 - i) action of metallic sodium on phenol
 - ii) action of phosphorous pentachloride on phenol.
 - c) Differentiate between primary, secondary and tertiary alcohol with example.
 - d) The vapor pressure of solvent is lowered by addition of non-volatile solute. Explain.
 - e) Differentiate between alkanes and alkenes.
 - f) Explain the following terms :
 - i) Isomerism
 - ii) Polymerisation.
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