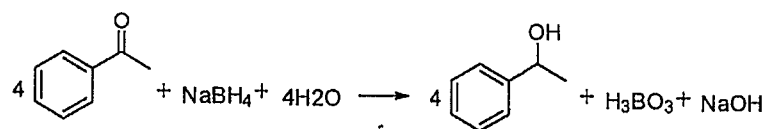


13346

4

7. (a) Define atom economy. Calculate the atom economy of the following reaction :



Atomic masses : C = 12, H = 1, O = 16, Na = 23.
B = 11.

- (b) Justify the statement "Use of auxiliary substances (e.g. solvents, separation agents, etc.) should be made unnecessary wherever possible and, innocuous when used".
- (c) What are the problems associated with the use of conventional fossil fuel-based energy sources? Which green energy sources can be used in laboratories for accomplishing synthesis of compounds? (5,5,5)
8. Write short notes on the following :
- (a) History of Fragrance
- (b) Application of Flavours
- (c) Microwave Assisted Extraction. (5,5,5)

(2000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 13346

K

Unique Paper Code : 2174001212

Name of the Paper : GE Chemistry of Fragrances
and Flavours: An Industry's
Perspective

Name of the Course : B.Sc. (H)

Semester : VII

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any six questions in all.
3. All parts of a question should be attempted together.
4. Each question carries 15 marks.

P.T.O.

13346

2

1. (a) Define the term perfume and explain its origin.
(b) Explain the classification of odour according to their sensory characteristics.
(c) Discuss the importance of top notes, middle notes, and base notes in perfumery. (5,5,5)
2. (a) What are aroma chemicals, and how are they used in perfumery?
(b) Discuss the role of solvents in perfume formulation.
(c) Analyse the economic and cultural role of India in the global fragrance and essential oils market. (5,5,5)
3. (a) List the five basic tastes and identify the receptors responsible for each.
(b) Discuss the significance of the Maillard reaction in food processing.
(c) Discuss the physical, chemical, and environmental factors that affects flavour stability in foods and beverages. (5,5,5)

13346

3

4. (a) Discuss two common flavour enhancers used in food products with their structures.
(b) Give the sources and characteristics of flavour raw materials.
(c) Explain how enzymes are used in the production of flavour compounds in the flavour industry. (5,5,5)
5. (a) How do functional groups affect the properties of fragrance molecules?
(b) Distinguish between steam distillation and water distillation in the extraction of essential oils.
(c) What is supercritical fluid extraction (SFE)? Explain its process and advantages over traditional oil extraction techniques. (5,5,5)
6. (a) Explain how the fragrance industry faces significant sustainability challenges that impact its environmental footprint?
(b) How D-Limonene is extracted from orange peels using liquid CO₂.
(c) Discuss the legal aspects for the regulations of natural and artificial flavours. (5,5,5)

P.T.O.