

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6488

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Unique Paper Code : 2174001212

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

Name of the Course : All Undergraduate Courses Except with Chemistry Discipline

Semester : II

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

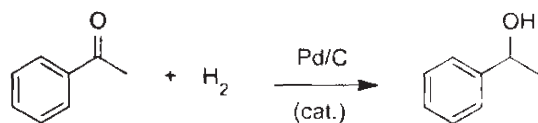
1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **six** questions. **All** parts of a question should be attempted together,
3. Each question carries **15** marks.

1. (a) What are the issues associated with the commonly used organic solvents? Green solvents have emerged as environmentally benign alternative to these. Explain.
(b) Explain "Risk is a function of hazard and exposure." Which principle does this mathematical equation fall under?
(c) Calculate the atom economy for each of the routes involved in the synthesis of secondary' alcohol.

Route -1



Route - 2



Atomic Masses :

C = 12, H = 1, O = 16, Na = 23, B = 11

(5,5,5)

2. (a) Describe the classification of fragrances using a fragrance wheel, highlighting relationships among olfactory groups.

P.T.O.

- (b) How does the sense of smell influence perfumery? Discuss with reference to the structure and function of the olfactory system.
- (c) Distinguish between natural and synthetic raw materials used in perfumery and evaluate their advantages and disadvantages. (5,5,5)
3. (a) Complete the following table giving one example of natural ingredient and molecule corresponding to each of the olfactive families.

Olfactive Family	Natural Ingredients	Molecules
AROMATIC		
FLORAL		
GREEN		
CITRUS		
SPICY		

- (b) Briefly discuss the challenges of sustainability and its impacts on perfumery industries.
- (c) Differentiate between flavours and fragrances. (5,5,5)
4. Write short notes on **any three** of the following :–
- Fragrance Pyramid
 - Green Techniques for Extraction of Essential oil
 - Notes and Accords
 - Catalysis
 - Renewable Feedstocks (15)
5. (a) Stability of food flavours is a complex issue. Explain by giving the chemical interactions involved.
- (b) Explain the concept of flavour precursors. Give one example. (10,5)
6. (a) Explain smoke flavourings, their method of preparation, and major chemical components responsible for flavour.
- (b) Differentiate between taste, aroma, and flavour. (10,5)
7. (a) Explain the biogenesis of flavouring substances via lipid oxidation. Describe the formation of “green notes” in plants.
- (b) Write a short note on distillation technique and its types used for essential oil extraction, (10,5)
8. (a) Discuss flavour modifiers, including flavour enhancers and suppressors. Explain their role with suitable examples.
- (b) What is adsorption? Mention its applications in aroma recovery. (10,5)