

- (b) What do you mean by the term "Flavour Modifiers"? Explain by giving an example.

(10,5)

8. (a) What do you mean by hydro-distillation technique for essential oil extraction and discuss the advantages of Clevenger apparatus over normal distillation apparatus.

- (b) How flavouring substances can be classified according to Food Safety and Standards Act (FSSA) of India?

(10,5)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5850

H

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) Define perfume? Differentiate between oil and alcohol-based perfume. Which city is known as perfume capital of India?

- (b) Briefly discuss the role of Fragrance and Flavor Development Centre (FFDC) in the context of perfume industries.
- (c) Define fragrance? With the aid of fragrance wheel elaborate and place the different scent into four olfactive groups with examples. (5,5,5)
2. (a) Write a note on essential oil extraction from natural resources with example.
- (b) Define Green Chemistry and its significance. Write the twelve principles of green chemistry.
- (c) Discuss the term 'Sustainable fragrance-commitment to biodiversity'. (5,5,5)
3. (a) Why catalytic route is greener as compared to stoichiometric route? Differentiate between catalytic and stoichiometric synthesis.
- (b) Define atom economy and its significance. Calculate the atom economy of the given reaction and discuss whether it is atom economical or atom uneconomical reaction.
- (c) Define safer chemicals. Discuss any two safer chemicals in brief. (5,5,5)

4. (a) Write short note on "The role of India in the context of fragrance industries".
- (b) Classify aroma compounds by structure giving at least two examples with name, structure, and fragrance under each category.
- (c) Give any two key reactions used in perfumery industry for the conversion of raw materials into fragrance and discuss them briefly. (5,5,5)
5. (a) Discuss the olfactory system in human and write a note on "sensory evaluation of flavour and food".
- (b) Describe the terms "Flavour Enhancer" and "Flavour Suppressor" with examples. (10,5)
6. (a) Stability of food flavours is a complex issue. Explain by giving the chemical interactions involved.
- (b) Discuss the formation of Amadori rearranged compound during thermal processing of food. (10,5)
7. (a) Draw the possible interactions of added flavouring substances with starch and amino acids present in the food.