



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING**

**SECOND SEMESTER – APRIL 2015**

**FP 2806 - ORGANIC CHEMISTRY OF FOOD - II**

Date : 16/04/2015  
Time : 01:00-04:00

Dept. No.

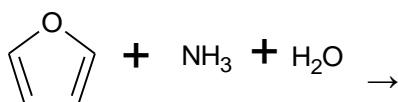
Max. : 100 Marks

**Part A**

**Answer ALL the questions. Each carries TWO marks**

**(10 x 2=20 Marks)**

1. What is  $\alpha$ -terpineol? Give its sources and application in food .
2. Give the difference between nerol and neral.
3. What are triphenyl methane dyes? Cite an example
4. What are hypsochromic and bathochromic shifts?
5. What are hemlock alkaloids? Why are they considered as poisonous?
6. What is cocaine? Mention its sources.
7. Complete the following reaction sequence.



8. What is the role of imidazole derivatives in cola industries and mention their permissible limits?
9. Write the structures of benzopyrylium chloride and flavylum chloride.
10. What are the factors that determines colour and shade of anthocyanins pigment?

**Part B**

**Answer ANY EIGHT questions. Each carries FIVE marks**

**(8 x 5 =40 Marks)**

11. Write short note on Zingiberene.
12. What is 1, 8 – cineol? Explain its sources and structure in detail.
13. a) What are pomegranate alkaloids?  
b) Discuss briefly about the isolation of piperine.
14. a) What are phenanthrene alkaloids?  
b) Give the difference between morphine and codeine.
15. a) What do you understand by azo dyes?  
b) How do you prepare congo red from bis-diazotised benzidine?
16. What are phthalein dyes? Explain its applications in dyeing industry.
17. Explain the role of phenolphthalein and methyl orange as indicators in food analysis.

18. i) Describe the reaction sequences when anthocyanin containing pigments are treated with acid. (3)  
ii) What are the possible sugars present in anthocyanin residues? (2)
19. What are isoflavones? Explain the base hydrolysis patterns of daidzein.
20. Explain the isolation procedure of flavonol.
21. Explain the mechanism of imidazole formation in  $^{13}\text{C}$  labelled glycine and alanine model system in food.
22. Explain the possible generation of furan by hexose and ascorbic acid degradation pathway.

### Part C

**Answer ANY FOUR questions. Each carries TEN marks (4 x 10 = 40) marks**

23. Explain the following
- i) Borsche-Dreschel synthesis of carbazole (2)
  - ii) Knorr pyrrazole synthesis (2)
  - iii) Possible occurrence of thiazole in food (6)
24. i) What are anthocyanins? Explain the factors favoring synthesis of Anthocyanins (5)  
ii) Structurally describe the types of anthocyanins and its corresponding aglycans (5)
25. Write short note on the following food colorants.
- a) Sun set yellow      b) Orange-B      c) yellow No5      d) Citrus red.
26. a) What are anthraquinone dyes? Give a suitable example. (3 )  
b) How will you prepare anthraquinone from anthracene? Write its suitable reactions. (7)
27. a) Discuss in detail the classification of alkaloids based on taxonomy and physiological effect.  
b) Mention any five general properties of alkaloids.
28. a) What are triterpenoids? Cite an example. (2)  
b) Explain the structural features and sources of gibberellic acid and squalene (8)

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