

**K-5/2110**

**7406/N**

**(Semester-III)**

**Paper- Chemistry Natural Products-322**

**Attempt any four questions**

**M. M. 55**

1. How will you determine the presence of phenanthrene type of framework in thebaine?  
Also, describe the synthesis of morphine 6.75+7=13.75
2. Describe the following
  - (a) alkali fusion of quercetin (7)
  - (b) ozonolysis of p-santonide (6.75)
3. (a) Give the biosynthesis of cholesterol. (6.75)  
(b) Draw the Mevalonic acid pathways and Acetogenesis. (7)
4. Describe the synthesis of quinine. (13.75)
5. Discuss the dehydrogenation of reserpine and santonin and describe different substitutions which can be determined in reserpine during dehydrogenation.  
(7+6.75=13.75)
6. Describe the structural elucidation of Abietic acid and cedrene. (6.75+7=13.75)
7. How will you determine the presence and position of carbonyl group in 12-oxo-cholic acid, olefin bond, ring size using oxidation method and spectroscopic techniques (take proper examples of natural compounds). (13.75)
8. How will you show the following:
  - (a) Atisine contain nitrogen in bridge system (4)
  - (b) How spectroscopic techniques useful for the structural determination of laudanosine? Explain (4)
  - (c) Explain Dehydrogenation with Selenium dioxide (5.75)
9. (a) Discuss the degradation of Morphine to Apomorphine (4)  
(b) Discuss the oxidation of progesterone using chromic acid  
and alkaline potassium permanganate (5)  
(c) How will you determine the presence of nitrogen using Hoffmann degradation and Von Braun methods?(take proper examples of natural compounds) (4.75)