

**SEMESTER-IV**  
**NATURAL PRODUCTS & NUTRACEUTICALS**  
**PRACTICAL**

**Programme:** M.Sc  
**Course code:** P20/CHE/DSE/402/P  
**Course Type:** DSE-4  
**No. of Credits:** 2

**Max. Marks:** 50  
**No. of Hrs/Week :** 4 Hrs

**COURSE OUTCOME**

**CO1:** Quantitative analysis of Natural Products.

**CO2.:** Explain the Chemistry, isolation and extraction of Alkaloids and Caffeine with their medicinal utility in dosage form preparations.

**CO3:** Explain the Chemistry, isolation and extraction of Terpenoids with their medicinal utility in dosage form preparations.

1. Caffeine from tea leaves (solvent extraction)
2. Piperine from pepper (Soxhlet extraction)
3. Eucalyptus oil from leaves (steam distillation)
4. Lycopene from tomatoes.
5. Synthesis of 7-hydroxy-3-methyl Flavone (Baker-Venkatraman reaction)
6. 6-Methyluracil
7. Fluorescein
8. Estimation of Ascorbic acid (Colorimetry)
9. Riboflavin (Colorimetry)
10. Riboflavin (UV-Visible Spectrophotometer).

**Reference books:**

1. Practical organic chemistry by Mann & Saunders
2. Text book of practical organic chemistry by Vogel
3. The systematic identification of organic compounds by Shriner et.al
4. Analytical chemistry by G N David Krupadanam et.al
5. Advanced practical medicinal chemistry by Ashutoshkar
6. Pharmaceutical drug analysis by Ashutoshkar
7. Quantitative analysis of drugs in pharmaceutical formulations by P D Sethi
8. Practical pharmaceutical chemistry part-1 and part-2 by A H Beckett and J B Stenlake

**NATURAL PRODUCTS & NUTRACEUTICALS**  
**PRACTICAL MODEL PAPER**

**COURSE CODE: P20/CHE/DSE/402/P**  
**Credits: 2**

**Max. Marks: 50**  
**Time:3hrs**

- 1) Write the principle involved in the given synthesis/ Estimation of a given organic compound. (CO1) 10 M
- 2) Determine the amount and percentage purity of the active component present in an unknown sample. (CO2 & CO3) 25 M
- 3) Record and Attendance 5 M
- 4) Viva 10 M