

Course Code	Course Title	C	H	I	E	T
17U4CAC4/	<b>ANCILLARY CHEMISTRY – IV</b> (For II Bot)	2	2	25	75	100

**UNIT I PURIFICATION OF ORGANIC COMPOUNDS** 6 Hrs

Purification techniques of organic compounds- Distillation – fractional distillation – distillation under reduced pressure – crystallization – sublimation.

**UNIT II SEPARATION OF ORGANIC COMPOUNDS** 6 Hrs

Chromatography: Definition, principles-Adsorption and partition- applications of chromatography.

A brief study of thin layer chromatography (TLC) and column chromatography.

**UNIT III BIOINORGANIC CHEMISTRY** 6 Hrs

Biological functions and toxicity of elements – chromium, copper and Arsenic - Role of alkali and alkaline earth metal ions in biological systems: Role of Na<sup>+</sup> and K<sup>+</sup> ions – Sodium pumping – Role of Mg<sup>2+</sup> and Ca<sup>2+</sup> ions.

**UNIT IV COLLOIDS** 6 Hrs

Colloidal state of matter – various types properties of colloids- Tyndall effect-Brownian movement-Lyophobic and Lyophilic sols, difference between them – Purification of colloids - dialysis – electro osmosis – electrophoresis.

**UNIT V EMULSION** 6 Hrs

Emulsion – types of emulsions with examples: oil in water and water in oil - Gels: classification and preparation by cooling of sols, double decomposition and by change of solvents. Application of colloids in the following fields: foods, medicine, industrial goods, rubber plating, chrome tanning, Cottrell precipitator and detergent action of soap.

**Reference books:**

1. Bhal, B.S. and ArunBahl, 2004, Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.
2. Puri, B.R., Sharma, L.R. and Pathania, M.S., 2004 (41<sup>st</sup>Edn.), Principles of Physical Chemistry, S.N. Chand and Co., New Delhi.
3. Madan, R.D., 2005, Modern Inorganic Chemistry, S. Chand and Co. Ltd., New Delhi.
4. Soni, P.L., 1998, Text book of Organic Chemistry, Sultan Chand and Sons, New Delhi.