M.Phil. –Chemistry [Semester – II]
PAPER- III- [Elective] ORGANIC CHEMISTRY
[50 marks]

1. Spectroscopy methods [25marks]
2. Ultraviolet and visible spectroscopy- colour and light absorption – Instrumentation and sampling – solvent effects – Application of electronic spectroscopy – conjugated Dienes, trienes and polymers – conjugated polymers and Eneynes – unsaturated carbonyl compounds – Benzene and its substitution derivatives – Heterocyclic systems – stereo chemical factors in electronic spectroscopy – Bi phenyls and binaphthyls - cis and trans isomers – fluorescence and phosphorescence – Absorption spectra of charge transfer complexes - symmetry restrictions on the allowedness of electronic transitions – optical rotatory dispersion and Dichronism – Electron spectroscopy for chemical analysis – Rapid – scan ultra violet – visible spectrometers – problems.
3. Mass spectroscopy – Instrumentation – Isotope abundances – The molecular ion – metastable ion m/z values – fragmentation process – fragmentations associated with functional groups – Alternatives to Electron – impact ionization – Gas Chromatography – Mass spectroscopy (G.C./M.S.) – Isotope substitution in Mass spectroscopy – Mass spectroscopy problems.

References:

1. Physical methods in Chemistry
- By R.S. Drago.

2. An introduction to spectroscopic methods for the identification of organic compounds –

- By Scheinmann, Vol. : 1&2

2. Carbohydrates [25 marks]

1. Vitamin C of L (+) – ascorbic acid – Maltose – Cellobiose – Trilsaccharides – Raffinose – Gentianose – Evertrilose – Poly saccharides – Cellulose & starch – Molecular weight determinations – chemical & physical methods – amylase & amylopection – photo synthesis of carbohydrates.
2. Glycosides – synthesis of glycosides – Inositol – Ganglioside – Tndican – Ruberythric acid – Arbution & methyl arbution – salicin.

References :

1. Carbohydrate Chemistry – By Davidson.
2. Carbohydrate Vol.: -5 Dyke (SF)