MPH2C.4 ADVANCED PHARMACEUTICAL ANALYSIS - II 3 Hrs/Week
THEORY

UNIT-I

1. A detailed study of the principles, instrumentation and applications of the following Instrumental analysis:
   - X-ray fluorescence spectrometry
   - X-ray diffraction
   - Scintillation counter
   - Inductively coupled plasma-atomic emission spectroscopy
   - Electron spin resonance spectroscopy (ESR)

UNIT-II

2. Interpretation of spectral data of Infrared spectroscopy, H^1 N.M.R & C^{13} N.M.R and MASS spectroscopy. for structural elucidation of organic molecules

UNIT-III

3. A detailed study of the various principles and procedure involved in the quantitative analysis of pharmaceutical preparations and dosage forms containing the following groups of drugs included in I.P. (Biological and microbiological methods excluded)
   (a) Analgesics and Antipyretics (b) Sedatives & Tranquillizers
   (c) Antihypertensives (d) Antibiotics & Antibacterials
   (e) Cardiovascular drugs (f) Vitamins
   (g) Antihistaminics (h) Antidiabetics

UNIT-IV

4. A detailed study of the principles and procedures involved in the qualitative and quantitative analysis of pharmaceutical preparations and dosage form using the following reagents and reactions.
   (i) Oxidative coupling reactions using MBTH (3-methyl-2-benzothiazolinone hydrazone hydrochloride)
   (ii) Diazotization followed by coupling
   (iii) Oxidation followed by complexation.
   (iv) Oxidation followed by charge transfer reaction.
   (v) Condensation reactions using the reagents Para Dimethyl Amino Benzaldehyde (PDAB), Para Dimethyl Amino Cinnamaldehyde (PDAC), Folin's reagent and Gibb's reagent.
   (vi) Folinciocalteu reagent (FC reagent)

REFERENCES:

1. Instrumental methods of analysis by Scoog and West.
2. Chemical Analysis – Modern Instrumentation methods and techniques by Wiley.
3. Instrumental methods of analysis by Willard Dean & Merrit.
4. Hand book of Instrumental techniques for analytical chemistry edited by Frank settle pub. by Prentice Hall Inc.
5. A text book of Pharmaceutical analysis by K.A.Conners (John Wiley)
6. Spectrometric identification of organic compounds by silver stein (7th Edition) 1981.
7. Pharmaceutical analysis edited by Higuchi and Brochmann.
8. Organic Spectroscopy by William Kemp