

**C.U.SHAH UNIVERSITY**

WADHWAN CITY

University (Winter) Examination -2013

Course Name :M.Pharm Sem-I

Subject Name: - Advanced Analytical Techniques

Marks : 70

Duration :- 3:00 Hours

Date : 10/01/2014

**Instructions:-**

- (1) Attempt all Questions of both sections in same answer book / Supplementary.
- (2) Use of Programmable calculator & any other electronic instrument is prohibited.
- (3) Instructions written on main answer Book are strictly to be obeyed.
- (4) Draw neat diagrams & figures (If necessary) at right places.
- (5) Assume suitable & Perfect data if needed.

**SECTION-I****Q-1 Define the following****(7)**

- (a) Van Demeter Equation
- (b) Non Aqueous Titration
- (c) RF & Ft Mode
- (d) Band Broadening
- (e) Tailing
- (f) Potentiometric Titration
- (g) NOE

Q-2(a) Discuss hydrogen decoupling and off resonance decoupling technique in CMR (5)

Q-2(b) Explain - Why C13 NMR spectra are more difficult to record than PMR? (5)

Q-2(c) Write in detail about the effect of various substitution on chemical shifts. (4)

**OR**

Q-2(a) Explain in detail metal estimation by AAS. (5)

Q-2(b) Explain various factors responsible for the band broadening in chromatographic column. (5)

Q-2 (c) How can you differentiate isomer of tri-chlorobenzene on the basis of their proton decoupled CMR spectra? (4)

Q-3(a) Write a detailed note on LAL test for pyrogens. (7)

Q-3(b) Discuss in detail Electron spin resonance spectroscopy . (7)

**OR**

Q-3(a) Write in detail about Rapid Resolution LC &amp; Nano LC. (7)

Q-3(b) Write Principle, instrumentation and application of AAS. (7)

**SECTION-II****Q-4 Define the following****(7)**

- (a) Resolution
- (b) Column selectivity
- (c) Pyrogen
- (d) UPLC
- (e) Coupling
- (f) Capacity factor
- (g) Cross Polarization



Q-5(a) Discuss about the source, chemistry and usual limits of endotoxins in pharmaceutical articles. (5)

Q-5(b) Describe tests for effectiveness of antimicrobial preservatives. (5)

Q-5(c) Sterility Testing of Surgical Catgut. (4)

**OR**

Q-5(a) Explain Column Switching in Chromatography (5)

Q-5(b) Write a note on Capillary electrophoresis OR Fluorescence spectroscopy. (5)

Q-5 (c) Describe eddy and longitudinal diffusion in detail. (4)

Q-6 (a) Write a detailed note on Counter current chromatography. (7)

Q-6 (b) Explain Principle, working and different types of LASER. Discuss Particle sizing by laser diffraction equipment. (7)

**OR**

Q-6(a) Write a detailed note on Laboratory Automation in Bioanalysis. (7)

Q-6 (b) Explain in detail about Raman spectroscopy (7)

\*\*\*\*\*10\*\*\*14\*\*\*

