

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph SEM-VII Examination-Nov/Dec.-2011

Subject code: 270004

Date: 26/11/2011

Subject Name: Pharmaceutical Analysis-III

Time: 10.30 am-01.30 pm

Total marks: 80

Instructions:

- 1. Attempt any five questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) Explain: Chromophore, End absorption, Bathochromic shift and hyperchromic effect. **04**
- (b) Explain origin of U.V.-Visible absorption spectrum. **04**
- (c) Discuss factors affecting absorption intensity. **04**
- (d) Ten tablets of isoniazide (M. Wt.= 137; Avg. wt.=132 mg; labeled value 100 mg) were powdered together and 200 mg powder was dissolved and diluted to 100 ml. 1 ml of this solution is further diluted to 250 ml and absorbance of last solution was found to be A at 266 nm. On calculation, using A and A(1%, 1 cm = 430 at 266 nm) the percentage stated value was 95.5. Calculate value of A. **04**
- Q.2** (a) IR spectroscopy is most widely used for identification of drugs. Explain, giving reasons. Also give pharmacopoeial applications of IR spectroscopy. **06**
- (b) How dispersive IR and FTIR differ from each other? What are advantages of FTIR compared to dispersive IR spectrophotometers. **05**
- (c) How solid, liquid samples are prepared for recording IR spectra? Give limitations and advantages of each method. **05**
- Q.3** (a) Discuss, in detail, factors affecting fluorescence intensity. **08**
- (b) Draw a well-labeled diagram of fluorometer and briefly explain function of each component. **04**
- (c) Give pharmacopoeial applications of fluorometry. **04**
- Q.4** (a) Explain: Precession, Spin number, Magnetogyretic ratio and Diamagnetism. **04**
- (b) Discuss factors affecting chemical shift. **06**
- (c) Give applications of NMR spectroscopy. **06**
- Q.5** (a) Discuss general principles of mass spectrometry. **04**
- (b) Discuss in detail, ESI, CI, MALDI, TOF and Tandem Techniques **06**
- (c) Giving suitable example; explain Nitrogen rule, Mc Lafferty rearrangement and resolution with reference to mass spectrometry. **06**
- Q.6** (a) Draw a well-labeled diagram of Atomic Absorption spectrophotometer and explain function of each component. **05**
- (b) Discuss in detail, procedure for finding Conc. of Potassium, Sodium and Lithium in different formulations like ORS powder, urine etc. **05**

(c) Explain very briefly: ICP, radiation buffers, Laser and Zeeman broadening in atomic spectroscopy. **06**

Q.7 Write notes on: **16**

- (i) Monochromator
- (ii) U.V.-Visible detectors
- (iii) Interaction between EMR and matter
- (iv) Use of spectroscopy in structure elucidation
