[LG 827] **APRIL 2015** **Sub. Code: 3827**

DOCTOR OF PHARMACY (PHARM. D / POST BACCALAUREATE)

DEGREE EXAMINATION

(2009-2010 Regulation)

FIFTH YEAR

PAPER III – CLINICAL PHARMACOKINETICS AND

PHARMACOTHERAPEUTIC DRUG MONITORING

Q.P. Code: 383827

Time: Three Hours **Maximum: 70 marks**

Answer All questions

I. Elaborate on: **(4 x 10 = 40)**

1. Explain plasma concentration monitoring of drugs during clinical use.
2. Explain the various methods to calculate the creatinine clearance from serum creatinine concentration.
3. The elimination half-life of an antibiotic is 3hrs with an apparent volume of distribution equivalent to 20% of body weight. The usual therapeutic range for this antibiotic is between 5 and 15µg/ml. Adverse toxicity for this drug is often observed at serum concentration greater than 20µg/ml.
   Calculate a dosage regimen (multiple IV doses) that will just maintain the serum drug concentration between 5 and 15µg/ml.
4. Explain the polymorphism in Cytochrome isoenzymes.

II. Write notes on: **(6 x 5 = 30)**

1. Determination of rate of administration.
2. Explain Nonlinear mixed effect model.
3. How is dosing interval determined on the basis of therapeutic index of the drug?
4. Application of clinical pharmacokinetics.
5. Give dose adjustment based on the following:
   a) Elimination rate constant.
   b) Half life.
6. General approach for dose adjustment in renal disease.

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