

# Cork Institute of Technology

## Bachelor of Science (Honours) in Herbal Science – Stage 3

(SHERB\_8\_Y3)

Summer 2008

### Pharmacology & Pharmacognosy

(Time: 3 Hours)

Instructions:

Answer **TWO** questions, from Section A  
and Answer **TWO** questions from Section B

Examiners:

Dr H McGlynn  
Mr G. Levieille  
Dr. D. Corrigan  
Dr. D. Clare

Use separate answer books for each Section.  
All questions carry equal marks.

### Section A

Q1. A patient given 20mg intravenous dose of a drug X gave the following plasma concentrations.

<u>Time After Dose (h)</u>	<u>Concentration (ng/ml)</u>
0.5	120
1	116
2	100
3	82
4	68
5	60
6	52
8	35
10	26
12	18
14	14
16	11

Using the appropriate graphs calculate the following:

- (a) Time Zero Concentration
- (b) The half life of the drug
- (c) The elimination rate constant of the drug
- (d) The volume of distribution of the drug

- Q2. Describe in detail the pharmacology of Cholinergic Neurotransmission.
- Q3. Describe the factors which influence the pharmacokinetics of a drug.
- Q4. Cancer Chemotherapy is an exercise in selective poisoning. Discuss in detail.

## Section B

- Q5. Describe the biosynthetic pathway leading to the accumulation of phenylpropanoid phytochemicals. Discuss the factors promoting their biosynthesis in plants.
- Q6. Discuss the “grape fruit effect” in the context of interactions between phytochemicals and orthodox medications.
- Q7. Alkaloids are a complex and heterogeneous class of natural products. Discuss their chemical characteristics and the general steps for the extraction of alkaloids.
- Q8. Discuss the different types of tannins, their chemical characterisation, their uses and applications.