

OLLSCOIL na h-EIREANN
University College, Galway
SPRING EXAMINATIONS 1998
THIRD SCIENCE EXAMINATION

APPLIED PHARMACOLOGY AND TOXICOLOGY PM301

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Time allowed: Three hours.

Answer FIVE questions, at least two from each section.

Use separate answer books for each section

SECTION A.

1. Describe how drugs associate with receptors and outline the important features of the drug-receptor complex. Show how the concept of affinity arises and describe how affinity may be measured and expressed quantitatively for a specific drug and receptor.
2. What is meant by the term "Structure:Activity Relations (SAR)" ? Discuss the methods which are employed to study SAR and the importance of these studies in drug development.
3. Write an essay on the various stages in the development of a drug.
4. What are Phase 1 and Phase 2 reactions in drug metabolism ? Illustrate your answer with examples. Briefly outline the main factors influencing the metabolism of drugs.

SECTION B.

5. Give an account of the mechanism of action of the major insecticides. Discuss the risks to man in using organophosphorus type cholinesterase inhibitors. Describe how an antidote to organophosphorus intoxication may reverse the toxic effects.
6. Write an essay on toxicity of industrial and household substances, using specific examples.
7. Write an account of *either* the skin *or* the liver as targets for toxic actions of drugs and chemicals.
8. Describe with examples the process of *either* carcinogenesis *or* teratogenesis.