

National University of Ireland, Galway
Ollscoil na hÉireann, Gaillimh

SUMMER EXAMINATIONS 2002 HONOURS

Denominated Degree in Biotechnology (4BY 221)

BIOTECHNOLOGY (BG 401)

First Paper

External Examiner: Dr. D.K. Apps

Time Allowed: Three hours

Write on *three* of the following topics, choosing at least *one* from each section.
Start each answer in a new answer book and write the number on the front.

SECTION A

1. Discuss the factors which affect bioremediation rates in contaminated soils. Compare and contrast the ability to control or manipulate these factors during *in situ* or *ex situ* soil bioremediation.
2. Discuss the microbial processes involved in the biomining of copper.
3. Comment critically on the application, advantages and disadvantages of the use of microorganisms for coal desulphurisation

SECTION B

4. Discuss the biochemical basis for the common morphological features of apoptosis, with particular reference to the role of proteolysis.
5. With respect to biological catalysts, give a general account of the factors that contribute to enhancement of the rate of reactions.
6. 'Action potentials are propagated unidirectionally without diminution.' Discuss this statement with particular reference to the biochemical mechanisms involved.