

National University of Ireland, Galway
Ollscoil na hÉireann, Gaillimh

SUMMER EXAMINATIONS 2000 HONOURS

Denominated Degree in Biotechnology (4BY 221)

BIOTECHNOLOGY (BG 401)

Third Paper

External Examiner: Professor N.C. Price

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. Describe the isolation and culture of plant protoplasts and discuss their possible uses in biotechnology.
2. Outline the problems associated with scale-up in downstream processing. Explain in detail *two* methods that may be used to overcome such problems.
3. Discuss the use of positional cloning to map and clone inherited disease genes.

SECTION B

4. Describe the possible contaminants of biopharmaceutical products destined for parenteral administration and indicate for each the consequences of its presence.
5. 'Growth factors are among the most important modulators of eucaryotic cell growth'. Discuss this statement with particular reference to their potential therapeutic uses.
6. You have been asked to develop a continuous cell line from rat liver for use in a pilot plant in a biotechnological company. Provide a detailed protocol, from cell isolation to scale-up operations in the pilot plant.