

OLLSCOIL NA hEIREANN, GAILLIMH  
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SUMMER EXAMINATIONS 2001

M. Sc. Biotechnology

First Year

Second Paper

EXTERN EXAMINER Professor C M Brown  
INTERN EXAMINER Internal Examiners

TIME ALLOWED: **3 hours**

ANSWER **FOUR** QUESTIONS IN TOTAL, WHICH MUST INCLUDE **TWO**  
QUESTIONS FROM **BOTH** SECTION A **AND** SECTION B.

PLEASE USE **SEPARATE** ANSWER BOOKS FOR EACH SECTION.

SECTION A

1. Write an essay entitled "Construction of a cDNA library".
2. Describe the polymerase chain reaction (PCR). Include examples of its application in the diagnosis of disease.
3. Write an essay entitled "DNA profiling".
4. Describe the application of yeast artificial chromosomes for the construction of large-insert genomic DNA libraries.

## SECTION B

1. Quality can be defined as the totality of characteristics and/or features of a product or service that bears on its ability to satisfy stated or implied needs. Critically discuss how the ISO 9000 series fulfills this requirement.
2. ISO 9000 provides a central role in a Quality Management System. Discuss.
3. Discuss GMP in terms of a Quality Management System for the Pharmaceutical/Healthcare Manufacturing Industries. What requirements does it address in addition to ISO 9000?
4. Write an essay on the routine duties of a microbiologist in the Pharmaceutical/Healthcare Manufacturing Industries with references to the techniques used.