

OLLSCOIL NA hÉIREANN, GAILLIMH  
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SUMMER EXAMINATION 1999/2000

B.Sc. (Hons.) in Microbiology

**Unit 1**

**Nucleic Acids**

EXTERN EXAMINER: Professor C M Brown

INTERN EXAMINER: Internal Examiners

TIME ALLOWED: 1<sup>1</sup>/<sub>2</sub> hours

(INDICATE CLEARLY THE QUESTIONS ANSWERED ON THE FIRST  
PAGE OF YOUR ANSWER BOOK)

Please Answer **TWO** Questions

- Q.1** Write an essay describing chromosomal DNA replication in the bacterial cell. Include details on the variety of protein types involved in DNA replication and also the linkage between DNA replication and cell division.
- Q.2** In terms of gene transcription in the bacterial cell, describe how individual genes on the chromosome are recognised by the RNA polymerase, and how global changes in cellular gene expression patterns can occur.
- Q.3** Describe how DNA-based methods have impacted on studies of bacterial systematics and ecology.