

**OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY**

**SEMESTER TWO EXAMINATION
1999/2000**

SECOND SCIENCE

MICROBIOLOGY

EXTERN EXAMINER Professor C M Brown
INTERN EXAMINER Internal Examiners

TIME ALLOWED: 3 hours

ANSWER QUESTION 1 AND FOUR OTHER QUESTIONS.

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

1. Choose one volume of Bergey's Manual of Systematic Bacteriology and describe its characteristic properties including a description of four of the sections found within it.
2. Write an essay entitled "Phenetic classification".
3. Describe how DNA-based methods can be used to study unculturable bacteria.
4. Write an essay on a microbial/plant symbiotic relationship found in nature. In your answer, comment on the role this relationship has in chemical recycling.

5. Write an essay on the life cycle of typical animal viruses. Include a schematic diagram in your answer.
6. Discuss the role of micro-organisms in hydrothermal vent ecosystems.

OR

Write notes on **two** of the following:

- (i) Trophic levels and the biomass pyramid.
- (ii) Observational methods of studying microbial activity.
- (iii) Synergism.

7. Discuss the importance of *E. coli* in the control of infectious disease.

OR

Discuss the factors that are thought to govern the emergence of new infectious diseases or the re-emergence of older conditions.