

**NATIONAL UNIVERSITY OF IRELAND
GALWAY**

SEMESTER I EXAMINATIONS, 1999-2000

THIRD SCIENCE

Zoology ZO307

Extern Examiner : Professor G. Fava.
and the internal examiners.

Time allowed : Three hours

Answer *five* questions

- Q 1. What is the difference between a morphological species definition and a biological (isolation) species definition ? What role does morphology have in the practical identification of species ?
- Q 2. Explain the terms “deme”, “gene pool” and “geographic isolate”. Discuss the importance of population size, and changes in population size, in the evolution of populations.
- Q 3. Distinguish between sympatrick and allopatrick (geographic) speciation. Which mode of speciation is regarded as most common ? What cases can you cite where sympatrick speciation might have occurred ?
- Q 4. Write a general account of cleavage and the processes of blastulation and gastrulation.
- Q 5. Do the processes of microevolution adequately explain macroevolution ? Discuss some of the additional factors sometimes invoked to explain macroevolutionary events and trends.
- Q 6. Write an essay on *either* the Origin of the Metazoa *or* the Chordata.
- Q 7. *Either* write an illustrated account of the Placoderms *or* Describe and discuss the probable ancestors of the Amphibia.
- Q 8. Describe the advent and early radiation of the Reptilia.
- Q 9. How have mammals dealt with the problem of low ambient temperature ?
- Q 10. Delineate Wallace’s Realms and discuss briefly the characteristics of the mammalian fauna of each. Explain the discontinuous distributions of (a) Marsupials and (b) Camels.