

OLLSCOIL NA hÉIREANN
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SUMMER EXAMINATIONS 2004

Marine Zoology ZO421

Prof. M. J. Dring
and the internal examiners

Time allowed: 3 hours.

Answer 4 questions from any section

Section A

1. Describe the basic plan of organisation in the Ophiuroidea.
2. Give an illustrated account of the endoskeleton in the Ophiuroidea.
3. Provide an illustrated account of the structure and function of the ophiuroid tube foot.
4. Describe embryology **or** larval development in the Ophiuroidea.
5. Write an essay on the ecology of the Ophiuroidea.

Section B

1. Describe the basic plan of organisation in the Polychaeta.
2. Give a detailed account of feeding in the Polychaeta as reflected in their life styles
3. Describe the process and organs of excretion in the Polychaeta.
4. Describe sex and reproduction **or** larval development in the Polychaeta.
5. Write an essay on the ecology of the Polychaeta.

P.T.O.

(ZO421 continued)

Section C

1. Provide a detailed account of the bivalve shell and its formation in the Bivalvia.
2. Compare and contrast the feeding processes in the Protobranchia and the Lamellibranchia.
3. Give a detailed account the alimentary canal and the process of digestion in the Bivalvia.
4. Describe sex and reproduction **or** larval development in the Bivalvia.
5. Write an essay on the ecology of the Bivalvia.

Section D

1. Provide a detailed account of the sensory systems of fishes which allow them to respond to pressure, sound and electric signals.
2. Describe vision in fishes.
3. Give an account of schooling and shoaling behaviour in pelagic fishes.
4. Write an account of the temporal and spatial patterns of migration of fishes at different stages of their life cycle.
5. **Either**
Give an account of the factors that influence the growth of fishes and describe methods used in age determination;
or
Write an essay on symbiotic and other associations among fishes and between fishes and different classes of organisms.

P.T.O.

(ZO421 continued)

Section E

1. Write an account of temperature control in fish.
2. Write an essay on patterns and strategies of fish migration.
3. Describe in detail the structure and functioning of the lateral line system in fish.
4. Write an essay on electric production in fish.
5. **Either**
Give an account of the factors that influence the growth of fishes and describe methods used in age determination.
or
"Fishes show a wide adaptive radiation in their feeding habits". Discuss.

Section F

1. Write a brief essay on either the Monogenea or the Digenea, with particular reference to fish parasites.
2. Discuss the life-cycles of Cestoda that infect Irish fishes.
3. Give an account of the special adaptations for parasitism exhibited by the Acanthocephala,
4. Discuss the factors that affect host-specificity of fish parasites.
5. Discuss the natural defence mechanisms evolved by fishes to counter adverse effects of their parasites.