

NATIONAL UNIVERSITY OF IRELAND
GALWAY

OLLSCOIL NA hÉIREANN, GAILLIMH.

SUMMER EXAMINATIONS, 2000.

BIOLOGY BO101.

FIRST PAPER

Extern Examiner : Professor G. Fava.

Time Allowed : Two and one half hours

Answer four questions.

1. Evolution is validated by evidence from many areas of biology, including the fossil record, biogeography and comparative anatomy. Discuss fully.
2. Compare and contrast the feeding mechanisms and digestive processes in *Amoeba* and *Paramecium*.
3. Describe the digestive system and excretory system either in *Fasciola hepatica*, the liver fluke or in *Lumbricus terrestris*, the earthworm.
4. List the chief constituents of mammalian blood, very briefly describe their functions and then describe in detail the mechanism of blood clotting.
5. Trace a bread, butter and ham sandwich moving through the human alimentary canal, describing what happens to the food in each region of the digestive tract.
6. List and explain the four key features which characterise the specific immune system and describe in illustrated detail the selective activation of a B lymphocyte.
7. Briefly describe the human kidney and give a detailed account of hormonal regulation of kidney functions

or

Define the words ecology and biosphere. Describe the environmental variables with which animals have to cope and the responses of animals to environmental change.