

NATIONAL UNIVERSITY OF IRELAND, GALWAY
Ollscoil na hÉireann, Gaillimh

Summer Examinations, 2000 - Honours
B.Sc. Degree and M.Sc. Qualifying Examinations

BIOCHEMISTRY (BI401)

Second Paper

Extern Examiner: Professor N.C. Price

Time allowed: *Three Hours*

Write on **three** of the following topics, choosing at least one from each section.
Please start each topic with a new answer book and clearly indicate the number
on the front.

Section A

1. Give a full account of the factors that regulate the metabolism of liver glycogen.
2. Discuss the validity of long-term potentiation as a model for learning and memory.
3. Discuss the mechanisms by which genomic stability is maintained in mammalian cells

Section B

4. Describe the role of transcription factors in regulating eukaryotic gene expression, with particular reference to constitutive or cell-type or inducible transcription.
5. Discuss the involvement of mitochondria in apoptosis.
6. Describe how Dorsal and Bicoid proteins are involved in establishing the embryonic axes during *Drosophila* development.