

NATIONAL UNIVERSITY OF IRELAND, GALWAY
Ollscoil na hÉireann, Gaillimh

Autumn Examinations, 2002 - Honours

B.Sc. Degree Examination

BIOCHEMISTRY (BI401)

Second Paper

Extern Examiner: Dr. D.K. Apps

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. Discuss the role of DNA repair in preventing cancer in human cells.
2. Discuss the G1/S damage checkpoint with reference to its biochemical organisation and relevance to cancer.
3. Describe the role of transcription factors in regulating eukaryotic gene expression with particular reference to constitutive, **OR** cell-type specific **OR** inducible transcription.
4. Discuss the processes of anterior-posterior **AND** dorsal-ventral axis formation in the *Drosophila* embryo.

P.T.O.

Section B

5. 'Viruses are totally different from bacteria'. Discuss this statement, with particular reference to replication, assembly and therapeutic strategies.
6. Write an essay on cell adhesion. Include the structure and function of different types of cell adhesion molecules, with emphasis on their role in cell signalling.
7. Write an essay on the genetics of antibody diversity.