

UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For The Following Qualifications:–

B.Sc. B.Sc. (Intercal)

Virology C308: Molecular Virology

COURSE CODE : **VIRLC308**

UNIT VALUE : **0.50**

DATE : **30-APR-04**

TIME : **14.30**

TIME ALLOWED : **3 Hours**

C308 MOLECULAR VIROLOGY

Candidates must answer Sections A and B.

Please answer each section in a separate book.

All questions carry equal weighting.

Section A: 135/180 (essay, 3 from 6)

Section B: 45/180 (short answers, 1 from 2)

TURN OVER

C308 MOLECULAR VIROLOGY

SECTION A

Answer THREE questions

1. Discuss the role that retroviruses have played in the discovery of human oncogenes (proto-oncogenes). List 3 retroviruses, their corresponding oncogenes and the tumours induced in hosts.
2. Describe the lifecycle of herpes simplex virus.
3. Describe the normal function of the HIV-1 proteins currently targeted in antiretroviral therapy. Discuss the mechanisms of action of drugs that inhibit these proteins and discuss the consequences of the development of resistance to these drugs.
4. Describe the process of normal cellular translation of mRNA. Discuss the mechanisms used by viruses to ensure efficient translation of viral mRNAs in the infected cell.
5. Discuss the approaches used to discover antiviral drugs.
6. Using specific examples, describe the mechanisms that viruses have evolved to counteract the host immune response.

SECTION B

Answer ONE of the following two questions

1. Write short notes on the following molecular diagnostic techniques:
 - a. Southern blotting
 - b. Nested polymerase chain reaction
 - c. Fluorogenic 5' nuclease assay (TaqMan)
2. Write short notes on the following steps in the replication cycle of a complex retrovirus.
 - a. Entry
 - b. Reverse Transcription
 - c. Transcription of Proviral genes.

END OF PAPER