

BOWEN UNIVERSITY, IWO
DEPARTMENT OF BIOLOGICAL SCIENCES

2010/2011 SECOND SEMESTER EXAMINATION

BLY 402: MOLECULAR BIOLOGY & BIOTECHNOLOGY

Answer any **three** questions.

Time: 2hr 15 mins.

1. Describe the process of DNA replication as it occurs *in – situ*, (in the cell).
(25 Marks)

2. (a) State the differences between RNA and DNA.
(b) Draw and label a tRNA molecule.
(c) What is the importance of:
(i) the amino acid arm, and
(ii) the anticodon?

(25 Marks)

3. Discuss the structure and function of the following:

- (a) Messenger RNA (mRNA)
(b) Ribosomes.

(25 Marks)

4. The sequence below is taken from the **cytochrome b gene** of the mitochondrial DNA of the cervid, *Capreolus capreolus*.

(25 Marks)

5'...TTA TGA ATA GCA GCG GGC TTTCCA CGCCAT...3'

- (a) Determine the peptide chain specified by this sequence.
(b) Show diagrammatically the protein synthesis limitation complex for this peptide chain.

(25 Marks)