The Open University of Sri Lanka
Faculty of Engineering Technology
Final Examination- 2011

AEI 3234 Agricultural Biology I

Date : **28-03-2011**
Time : **1400-1700**
Duration : **Three (03) hours**

SECTION II: Answer any four (04) questions.

(1) (a) Explain how a peptide bond is formed between two amino acids.
(b) Describe the double helix structure of DNA.
(c) Name three types of RNA molecules and indicate their major functions.

(2) (a) List **five (05)** characteristics of enzymes?
(b) Explain the mechanism of enzyme action.
(c) Briefly explain the factors affecting the enzyme reactions?

(3) (a) What is meant by "genotype" and "phenotype"?
(b) Tomatoes can be either yellow or red. Plants of these tomato types were crossed as follows:

Parents	Progeny
red×red	61 red
red×red	47 red, 16 yellow
red×yellow	58 red
yellow×yellow	64 yellow
red×yellow	33 red, 36 yellow

i. Which phenotype is dominant?
ii. What are the genotypes of the parents and progeny in each cross?

(4) Briefly explain the major differences between any **three (03)** of the following:
(a) Light reaction and dark reaction in photosynthesis
(b) Cross section of a Monocot stem and Cross section of a dicot stem
(c) Climacteric fruits and non climacteric fruits
(d) Mitosis and meiosis cell divisions
(e) Plant cell and animal cell

(5) (a) What is photosynthesis?
(b) Discuss the importance of light reaction in photosynthesis
(c) Write a brief account on special characteristics of CAM pathway.

(6) (a) Differentiate between prokaryotic cells and eukaryotic cells.
(b) Draw a line diagram of the structure of a typical plant cell and label all the parts.
(c) Briefly explain the fluid mosaic model of a cell membrane.