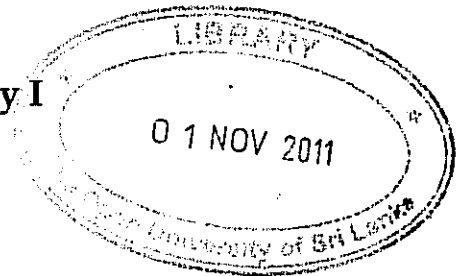




The Open University of Sri Lanka
Faculty of Engineering Technology

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:
- | <u>Parents</u> | <u>Progeny</u> |
|----------------|-------------------|
| 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.