



The Open University of Sri Lanka
Faculty of Engineering Technology

Final Examination- 2008/2009

AEI3234 Agricultural Biology I



Date : 05-04-2009
Time : 0930-1230 hours

SECTION II Answer four (04) questions only.

- (1) (a) What is meant by "Simple tissues" and "Complex tissues"?
- (b) With aid of fully labelled diagrams explain the structure and functions of the following.
- i) Xylem vessels
 - ii) Xylem tracheids
 - iii) Sieve tubes with companion cells
 - iv) Stomata
- (2) (a) Define the following terms; Inheritance, offspring, variation, true breeding.
- (b) What do you understand by the term "Genelinks" ?
- (c) Brown seed colour (B) of cowpea shows dominance over green seed colour (b), Purple colour flower (P) shows dominance over white (p). Assume that the parents are homozygous for these characters. The following results are obtained in the back cross.
- | | |
|----------------------------------|----|
| Brown seed colour, purple flower | 40 |
| Brown seed colour, white flower | 08 |
| Green seed colour, purple flower | 10 |
| Green seed colour, white flower | 39 |
| | 97 |
- 1) Are these genes linked or not?
 - 2) If linked, calculate the percentage of recombinant.
- (3) Briefly explain the major differences between any three (03) of the following:
- (a) T.S of a Monocot leaf and dicot leaf
 - (b) Climacteric fruit and non climacteric fruit
 - (c) Aquatic ecosystem and Terrestrial ecosystem
 - (d) Photosynthesis and respiration
- (4) (a) Discuss the role of microorganisms in Nitrogen cycle and Sulphur cycle.
- (b) Explain how energy is transferred to each tropic level in an ecosystem.

- (5) (a) Briefly explain the external factors that affect respiration.
(d) Explain the pathway of glycolysis.
- (6) Write short notes on the followings
- (a) Types of consumers in an ecosystem
 - (b) DNA structure
 - (c) Co-epistasis
 - (d) Genetic drift