

November- 2013

Agroecology (CS2101)-Theory

Answer all questions

Time 3hours

1. (i) Define the terms Agroecology and agroecosystem (10 marks)
- (ii) What are the agroecological principles that guide development of sustainable agroecosystems (40 marks)
- (ii) What are the changes need to be made in conventional agricultural systems to convert them into sustainable agro ecosystems (50 marks)
2. (i) Give determinants and factors that must be taken into account in managing light environment in agroecosystems (20 marks)
- (ii) Briefly explain different practices that can be used to modify microclimatic temperature in an agroecosystem (50 marks)
- (iii) How to modify and mitigate wind effect in an agroecosystem (30 marks)
3. (i) How organism-environment-organism model use to understand mechanisms of biotic interactions when designing sustainable agroecosystems (30 marks)
- (ii) Briefly explain additional and removal interferences in an agroecosystem (30 marks)
- (iii) "A non crop organism can have either negative or positive impacts on the crop community of which it is a member". Giving examples comment on this statement (40 marks)
4. (i) Briefly explain different methods used to increase diversity in an agroecosystem. (30 marks)
- (ii) What is the connection between diversity and the avoidance of risk in agroecosystems? Give examples to support your view point (30 marks)
- (iii) What are the ecological mechanisms allowing a crop to produce higher yield in an intercrop than in monoculture (40 marks)
5. (i) What are the benefits of using systems thinking techniques"? (30 marks)
- (ii) Describe following terms
- a) Reductionism (15 marks)
 - b) Holism (15 marks)
 - c) Silo effect (15 marks)
- (iii) Discuss this statement "Systems change in response to the feedback" (25 marks)

REFERENCE ONLY
NOT TO BE TAKEN AWAY

