

M.Sc. (Ag.) Examination, 2015
Semester – IV
Agronomy : Cropping Systems and Sustainable Agriculture
Course : AGR-514

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin.

Answer *any five* questions.

1. What do you mean by integrated farming system? Classify farming system according to water supply, type of rotation and degree of commercialisation. Write in brief various kinds of indigenous farming systems in India. 2+(2+3+2)+7=16
2. Define sustainable agriculture. Enlist indicators of sustainable agriculture. Give an account of practices of modern agriculture in relation to sustainability. Suggest strategies for sustainable management of degraded land. 2+2+6+6=16
3. Define cropping system. Classify cropping systems. What is relay cropping? Highlight the role of relay cropping for sustainable crop production in eastern India. How can you determine the yield advantages in intercropping system? 2+3+2+5+4=16
4. Give an account of water resources in India. Suggest strategies for sustainable management of water resources in India. Give your opinion on agricultural practices causing ground water pollution. What are the emerging issues for sustainability in rice based cropping system in West Bengal? 4+5+2+5=16
5. Write in brief (*any four*): 4×4=16
 - (a) IWM in cropping system or sustainable crop production
 - (b) IFS for wetland situation
 - (c) Ecophysiological approaches to inter cropping
 - (d) Diversification in cropping system
 - (e) Efficient cropping systems
 - (f) Interactions of different components in farming system
6. Distinguish between the following (*any four*): 4×4=16
 - (a) Low external input agriculture vs High external input agriculture
 - (b) Off farm inputs vs on farm inputs
 - (c) Agro biodiversity vs biodiversity
 - (d) Sustainability vs profitability
 - (e) Cropping system for rainfed low land vs irrigated upland
 - (f) Organic farming vs conventional farming

P.T.O.

(2)

7. Explain the following (*any four*):

4×4=16

- (a) CLUI & CII
- (b) Aggressivity & RCC
- (c) Competition index & Competition Ratio
- (d) Crop rotation and rotational intensity
- (e) Strip intercropping and multi-tier cropping
- (f) MCI & ATER

8. Write short notes on the following (*any four*):

4×4=16

- (a) Objectives of sustainability
 - (b) Ecological principles of sustainable agriculture
 - (c) Basic concepts of INM in cropping systems
 - (d) Role of agro biodiversity in sustainable agriculture
 - (e) Sustainable yield index
 - (f) Crop simulation model
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Noted
20/11/20
20/11/20