

M.Sc.(Ag.) Semester – I Examination, 2014

Agronomy

Course : AGR – 501

(Modern Concepts in Crop Production)

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin.

Answer **any five** questions.

1. (a) Differentiate between the followings (**any five**): (2×5)+(1×6)=16
- i) Integrated nutrient management (INM) and site specific nutrient management (SSNM)
 - ii) Organic farming and conventional farming
 - iii) Cropping system and cropping pattern
 - iv) Minimum tillage and zero tillage
 - v) Field capacity and wilting point
 - vi) Rainfed farming and dryland farming
- (b) Define the following (**any six**):
- i) Balanced fertilization
 - ii) Length of Growing Period
 - iii) Net Assimilation Rate
 - iv) Soil structure
 - v) Primary centre of origin
 - vi) Leaf Area Index
 - vii) Cardinal temperature
2. Write short notes on the following (**any four**): 4×4=16
- i) Agro climatic zones of India
 - ii) Conservation tillage
 - iii) Sigmoid growth curve
 - iv) Relations of soil physical properties with plant growth
 - v) Mitscherlich law of diminishing return
3. Briefly explain the following (**any four**): 4×4=16
- i) Basic principles of crop production
 - ii) Relation between population and crop yield
 - iii) Crop response production functions
 - iv) Physiological basis of grain yield in rice
 - v) Features of any one agro-ecological region

P.T.O.

4. Explain the following concepts (*any eight*):

2×8=16

- i) Paira cropping
- ii) Inverse yield N law
- iii) Harvest index
- iv) Plant available water
- v) Growing degree days
- vi) Relative growth rate (RGR)
- vii) Crop modeling for desired crop yield
- viii) Long day and short day plant
- ix) Rain water harvesting

5. Briefly answer the following (*any four*):

4×4=16

- i) Crop lodging
- ii) Quantative agro-biological principles in crop production
- iii) Ideal plant type for desired crop yield
- iv) Environmental stress and biotic stress
- v) Resource Conservation Technologies

6. Define integrated farming system. What are the various components of integrated farming system? Explain the advantages of integrate farming system. Write in brief about different models of integrated farming system based on agro-ecological situation.

1+3+6+6=16

7. Narrate in details the advantages of organic farming. What are the limitations of organic farming system? Discuss about the scope of organic farming in India.

5+5+6=16

8. Answer the following questions in brief (*any eight*):

2×8=16

- i) Name few examples of livestock which an easily be integrated with rice based farming system under West Bengal condition.
- ii) What is the relation among LAI, CGR and NAR.
- iii) What are the causes of lodging in rice crop
- iv) Write different components of precision agriculture
- v) What do you mean by silvi-horti pasture
- vi) What are the points to be considered before integrating enter prises in IFS?
- vii) Merits and demerits of INM
- viii) On what basis Planning Commission (1989) delineated the country into 15 agro-climatic regions?
- ix) Role of APEDA in organic certification