B.E. / B.Tech. (Full Time) DEGREE ARREAR EXAMINATIONS, APR / MAY 2014

AGRICULTURAL AND IRRIGATION ENGINEERING BRANCH

THIRD SEMESTER

AI 9203 – PRINCIPLES OF CROP PRODUCTION

(REGULATION 2008)

Time: 3 hours   Answer ALL Questions   Max Marks: 100

Part – A (10 x 2 = 20 Marks)

1) What does the branch Nematology deal with? Give examples.

2) Expand – IPM, IARI, USDA, DAP

3) Differentiate erosivity and erodibility.

4) Define soil texture.

5) Sketch a disc plough and discuss its role.

6) What is the significance of base saturation?

7) Compare the fuel saved for a 500 acre farm through conventional tillage and no-tillage assuming the cost of diesel @ Rs.58/- per litre.

8) What are the different methods of paddy cultivation?

9) With few examples, discuss agroforestry.

10) Classify the major divisions of horticulture with suitable examples.

Part – B (5 x 16 = 80 Marks)

11) i) It is recommended that a farmer applies 70 kg of nitrogen and 30 kg of phosphorus per hectare to his field. How much of urea and single super phosphate should be applied to achieve the recommended rate?   (6)

ii) Discuss the Integrated Nutrient management in crop production.   (10)

12) a) i) Explain the advantages and disadvantages of intercropping systems.   (8)

ii) Discuss the various parameters of solar radiation on crop growth.   (8)

(or)

b) i) Justify how the knowledge on multidisciplinary subjects is necessary in practising agriculture.   (8)

ii) How does the plant spacing and arrangement affect crop growth?   (8)

13) a) i) Discuss the concept of soil moisture potential with respect to light, medium and heavy textured soils. (8)

ii) What is soil structure? Explain how it is classified and its importance for plant growth. (8)

(or)

b) i) Discuss the soil moisture depletion method and crop critical stages method of irrigation scheduling. (12)

ii) In a 25 ha catchment, the soil erosion is to be evaluated. The following information for the catchment is available. R = 1100 t-m/ha mm/h; K = 0.24 t/ha/R; LS = 0.11; vegetative cover factor = 0.53, contour farming is practiced in 17 ha (P=0.6) and strip cropping in the remaining area (P=0.3). Calculate the soil loss using USLE and the annual soil loss when no such conservation measure is taken up. (4)

14) a) i) Discuss the important features of SSI method of sugarcane cultivation. (8)

ii) What is *ratooning* and explain how a ratoon crop is grown? (8)

(or)

b) i) Explain the primary and secondary tillage practices. (8)

ii) What is organic farming and how is it practised? (8)

15) a) i) Discuss the propagation methods of banana. (8)

ii) Is it possible to practice drip irrigation for rice cultivation? Justify. (8)

(or)

b) i) Explain the drip irrigation system in detail with a neat sketch. (10)

ii) Discuss the Green House cultivation practises. (6)