BE (FULL TIME) DEGREE END SEMESTER EXAMINATIONS , APRIL/MAY 2011

AGRICULTURAL AND IRRIGATION ENGINEERING

VIII Semester

AI 482 IT IN AGRICULTURAL SYSTEM
(Regulation 2004)

Time : 3 hours   Max. Marks : 100

Answer All The Questions

<u>PART A</u>   10 X 2 = 20 marks

1.   What is the necessity of Precession farming?

2.   In what way Remote sensing data is helpful in identifying the stage of the crop?

3.   What are all the factors that influence the Greenhouse effect?

4.   Why Carbon credit accounts made for an industry?

5.   Differentiate between system approach and lumped approach in irrigation.

6.   Define simulation of a reservoir related to irrigation release.

7.   List the climatic factors which affect the evapotranspiration.

8.   State the functional requirements for knowledge base expert system.

9.   How to adopt e-governance for current day irrigation business management?

10.   Write short notes on information society in social perspective of a rural.

<u>PART B</u>   5 X 16 = 80 marks

11.(i)   "Modernisation (Recent Trend) of agricultural and irrigation through Management information
          system and E-Commerce". Explain with appropriate example for Agricultural management
                                                                                                (8)
   (ii)   Explain briefly with schematic diagram for developing Irrigation management Decision
          Support System (DSS)   (8)

12.a)(i)   Explain the methods used in creating GIS information system for precision forming?   (9)
     (ii)   How the Remote Sensing technique is applied in estimation of crop production   (7)

(OR)

12.b)(i)   Describe in details of the crop yield mapping with respect to the space and time variation.(6)
     (ii)   How to estimate the distance form a agriculture field to shortest market location for selling
             the crop yield (production)?   (10)

13a)(i) What are the advantages and disadvantages of on-line growth measurement in a agricultural system? (7)

(ii) Explain the components of a carbon cycle and list the external factors that disturbs the natural cycle. (9)

(OR)

13b Explain briefly environmental pollution which affect the growth of the crop. Also describe the methods of controlling ground water contamination from the non-point source pollution. (16)

14.a) Explain briefly the soil moisture simulation model and indicate the important parameters used in the model. (16)

(OR)

14.b) Determine the optimum crop area of Ground nut and paddy from the following data. (16)

Maximize Z = 5x GA + 8x PA (Benifit)

Subjected to :

GA + 2x PA <= 1000 (Cost)

4x GA + 3x PA <= 2400 (Period of water irrigation)

PA + GA <= 700 (Ayacut Area available)

GA >= 50

PA >=150 (Minimum Area cultivation)

15.a) What are the meteorological data observed in a weather station in order to estimate the climate change? Explain the procedure to create the data base management system to store and retrieval of the climatical data. (16)

(OR)

15.b) Monthly flow recorded in a river for the period 1995 to 1997 are given below. Estimate the 75 % dependable flow in the river. Also estimate forecast values of the flow for the next three months namely September , October and November. (16)

Month	June 1995	July 1995	August 1995	Sep. 1995	Oct. 1995	Nov. 1995	Dec. 1995	Jan 1996	Feb. 1996	Mar. 1996
Flow in M m³/month	29.47	35.21	23.99	41.24	67.21	78.26	33.88	22.21	12.55	5.76

Month	Apr. 1996	May 1996	June 1996	July 1996	August 1996	Sep. 1996	Oct. 1996	Nov. 1996	Dec. 1996	Jan 1997
Flow in M m³/month	2.88	5.22	17.55	38.65	25.66	45.55	68.77	80.55	34.55	25.33

Month	Feb. 1997	Mar 1997	Apr. 1997	May 1997	June 1997	July 1997	August 1997	Sep. 1997	Oct. 1997	Nov. 1997
Flow in M m³/month	15.7	4.62	3.55	6.88	22.55	34.55	21.67	???	???	???

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