B.E (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

AGRICULTURAL AND IRRIGATION ENGINEERING

VII Semester

2.0

AI9404 - IT in Agricultural Systems

(Regulation 2008)

Time: 3 Hours   Answer ALL Questions   Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Why to choose Precision Agriculture over conventional Agriculture system now days in developing countries also? Also, list out the reason for its hindrance in past decades.

2. How to identify the Nitrogen content of the soil in precision Agriculture.

3. Compare and contrast protected and controlled environment agriculture.

4. Define crop growth management practice.

5. How to determine the dependability of a system?

6. What are the different approaches used for project scheduling?

7. What are GCMs?

8. What are the pressure anomalies that affect the Indian subcontinent?

9. Differentiate E-business and E-commerce.

10. What is the importance of technology enhanced learning systems?

Part – B (5 x 16 = 80 marks)

11.   i. Explain briefly the application of ground based sensors in precision agriculture. (8)
      ii. Describe the steps involved in creating Yield map. (8)

12. a)   i. What is the need for artificial lighting systems? Explain briefly the types of artificial lighting systems used in greenhouses. (8)
      ii. Explain briefly the different types of heating systems used in greenhouses. (8)
                                 (OR)
    b)   i. What is the importance of Co_2 simulation in greenhouse? Also, explain briefly the principle and components of Co_2 simulation. (8)
      ii. How to manage the irrigation systems and control weed in protected agriculture? (8)

13. a)   i. Explain briefly the principles and working of crop growth models. (10)
      ii. Explain briefly the various indices for measuring the performance of a system. (6)
                                 (OR)
    b)   i. Calculate the scheduled completion time and critical path for the following project along with the allowable slack time: (12)

Activity	Immediate predecessor	Normal Time
A	-	5
B	A	1
C	A	3
D	A	2
E	A	4
F	B,C	1
G	F	4
H	G	2
I	G	4
J	H,I	2
K	I	2
L	D,J	3
M	K,L	3
N	M	3
O	E,M	4
P	J	4

ii. A farmer has a 320 acre farm on which she plants two crops: corn and soybeans. For each acre of corn planted, her expenses are $50 and for each acre of soybeans planted, her expenses are $100. Each acre of corn requires 100 bushels of storage and yields a profit of $60; each acre of soybeans requires 40 bushels of storage and yields a profit of $90. If the total amount of storage space available is 19,200 bushels and the farmer has only $20,000 on hand. What is the linear programming model for maximizing the profit with the available constraint? (4)

14. a) Explain briefly the occurrence of El Nino, La Nina and normal conditions in Pacific Ocean with suitable sketches. (16)

(OR)

b) i. Write short notes on the working principle and types of available GCMs. (12)
ii. Explain the working of Indian Ocean Dipole during the positive, negative and neutral conditions. (4)

15. a) i. Explain with a suitable case the principle, components and working of Expert systems in Horticulture. (10)
ii. Explain briefly the components and working of Decision support Systems. (6)

(OR)

b) i. Write short notes on the creation of Agricultural and Biological Database systems. (4)
ii. Define E-Commerce and its types. (4)
iii. With a suitable case study explain the success of E- Business in Agriculture. (8)