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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

AGRICULTURAL AND IRRIGATION ENGINEERING

SECOND SEMESTER

AI 8201 PRINCIPLES OF AGRICULTURAL AND IRRIGATION ENGINEERING

(Regulation 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Differentiate Agricultural Engineering from Agricultural Science.
2. Define Watershed Management
3. Why Agro meteorological studies are gaining momentum in present world?
4. What is a green house and poly house?
5. Name any four types of Tractor used in Agricultural operations.
6. What is 'Mulch Tillage'?
7. Define Material Handling.
8. Name some of the milk products obtained by fermentation process.
9. What are the two types of biogas plants?
10. Differentiate conduction, convection and radiation.

Part – B (5 x 16 = 80 marks)

11. Explain briefly the Soil, water and Plant relationship. (16)
 12. a) Explain briefly the different irrigation methods. (16)
- OR**
- b) Explain briefly about the factors controlling the plant growth environment. (16)

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13. a) i. The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare for 8 furrow openers, Spacing between furrows – 15 cm, Diameter of drive wheel – 1.5 m, RPM of the drive wheel – 600 and Seed collected – 25 kg. (8)
- ii. Explain briefly the types of Tillage. (8)

OR

- b) i. Explain briefly about the components of a seed drill. (8)
- ii. A centrifugal pump is operating at a pressure of 50 psi, 1200 rpm impeller speed and 30 cm impeller diameter in a sluice point. Find the total head at which the pump operates assuming a frictional loss of 30% due to fittings. (8)
14. a) Explain briefly all the unit operations in a food processing unit. (16)

OR

- b) i. Explain briefly the need, merits of material handling. (8)
- ii. Explain briefly about the structure of milk. (8)
15. a) Explain briefly the importance of biomass, classification and principles of energy production from Biomass. (16)

OR

- b) Explain the types of solar energy collectors and some of the useful appliances that replace the conventional appliances. (16)