



Reg. No:

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5104 - ARUNAI ENGINEERING COLLEGE**(Autonomous)****TIRUVANNAMALAI****B.Tech Agricultural Engineering**

YEAR: III

SEMESTER: V

CIA Test - I**Subject Code/Name: AI3019/SUSTAINABLE AGRICULTURE
AND FOOD SECURITY****B****Date: 03.09.2025/FN****Maximum: 60 Marks****Time: 1 Hr 40 minutes****Answer ALL questions.****PART – A (10 X 2 = 20Marks)**

1. Difference between created and utilized irrigation potential.

(K2)(CO1)

2. Role of river basins in water resources.

(K2)(CO1)

3. Changes in cropping pattern in India.

(K1)(CO1)

4. Define drought in agriculture.

(K1)(CO1)

5. What is utilizable surface water?

(K1)(CO1)

6. Name two indicators of sustainable food availability.

(K1)(CO2)

7. Give an example of state-level food grain production.

(K1)(CO2)

8. List factors affecting crop yield.

(K2)(CO2)

9. Define food production sustenance.

(K1)(CO2)

10. Mention one effect of climate change on soil fertility.

(K2)(CO2)

PART – B (2 X 13 = 26 Marks)

11. (i) Discuss factors causing land degradation and its impact on agriculture.(7)

(K2)(CO1)

- (ii) Explain available, created, and utilized irrigation potential with examples. (6)

(K2)(CO1)

12. (i) Discuss the effect of climate change on soil fertility and mitigation measures. (7)

(K3)(CO2)

- (ii) Explain food production sustenance with examples. (6)

(K2,K3)(CO2)

PART – C (1 X 14 = 14 Marks)

13. (i) Discuss river basins, watersheds, and future utilizable water potential (groundwater and surface water) for sustainable agriculture in India.(7)

(K2K5)(CO1)



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PART – C (1 X 14 = 14 Marks)

13. (i) Discuss river basins, watersheds, and future utilizable water potential (groundwater and surface water) for sustainable agriculture in India. (7)

(K2,K5)(CO1)

(ii) Evaluate state-level food grain production and indicators of sustainable food production, suggesting measures for food security.(7)
(K5)(CO1)

COURSE OUTCOMES:

CO 1: Understand methods to sustain land resources.

CO 2: Cognize approaches to sustain water resources and its utilization for agriculture and allied activities

Prepared By,
Mrs.E.NIVETHA
AP/AGRI

Verified By,
Mr.R.KATHIRAVAN
HoD/CIVIL

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