



FIJIANATIONAL UNIVERSITY

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY (CAFF)

SCHOOL OF AGRICULTURAL SCIENCES

DEPARTMENT OF CROP PRODUCTION

BACHELOR OF EDUCATION (SECONDARY) AGRICULTURE SCIENCE YEAR III

AGO 701 (Farming Systems and Sustainable Agriculture)

FINAL EXAMINATION TRIMESTER- 1, 2017

DURATION 3 HOURS 10 MINUTES

(An extra 10 minutes reading time in which you are NOT permitted to write)

INSTRUCTIONS TO STUDENTS

1. This paper consists for 5 pages. Please check to see that your paper is complete.
2. Printed or written material is not allowed in examination hall.
3. Answer all the questions in the answer booklet. Number your answers correctly in the answer booklet.
4. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
5. Use both sides of the answer sheet and write your candidate number on each sheet.

| SECTION | PARTICULARS | TOTAL MARKS | THE ALLOCATIONS |
|---------|--|-------------|-----------------|
| A | Part 1: Multiple Choices Part 2: Fill in the Blanks Part 3: True and False | 30 | 30 minutes |
| B | Short answers | 30 | 60 minutes |
| C | Long answers | 40 | 90 minutes |
| | Total | 100 | |

SECTION –A

There are three parts in this section. All the questions are compulsory. In your answer booklet write the question number followed by the answer.

Part 1: Multiple Choices. Pick the correct answer.

(10×1.5=15 Marks)

(1) Integrated management of both surface and ground water components in order to make best use of the complementary potential of each and to optimize the use of water resources is _____

- a. Conjunctive use of water
- b. Consumptive use of water
- c. Productive use of water
- d. None of these

(2) _____ refers to the process of enrichment of watercourses or surface water bodies by inorganic plant nutrients.

- a. Eutrophication
- b. Fertigation
- c. Nutri-enrichment
- d. None of these

(3) Land which can be brought under vegetative cover with reasonable effort, and which is currently underutilized and land which is deteriorating for lack of appropriate water and soil management or on account of natural causes.

- a. Wasteland
- b. Arable land
- c. Cropped land
- d. None of these

(4) The areas which suffer from non- availability of groundwater due to perennial over draft are known as _____

- a. Dark areas
- b. Brown areas
- c. Dry areas
- d. None of these

(5) The process of deposition of soil particles carried by water is called _____

- a. Siltation
- b. Infiltration
- c. Runoff
- d. None of these

(6) Transfer of forest land to non-forest uses and includes all land where the forest cover has been stripped off _____

- a. Deforestation
- b. Afforestation
- c. Forest destruction
- d. None of these

(7) _____ refers to decline in the productive capacity of land due to decline in soil quality caused through processed induced mainly by human activities.

- a. Soil degradation
- b. Siltation
- c. Sand casting
- d. None of these

(8) Scraping of the surface salts and flushing with water to wash away the excess salts is practiced in management of _____

- a. alkali soils.
- b. acidic soils.
- c. saline soils.
- d. none of these.

(9) Food crops are grown in alleys formed by hedgerows of trees or shrubs in arable lands. It is also known as _____

- a. Hedgerow intercropping
- b. Mixed cropping
- c. Sequence cropping
- d. None of these

(10) Insystem agricultural crops are intercropped with tree crops in the interspaces available between trees.

- a. Agrisilviculture system
- b. Silvi-pastoral system
- c. Agri-silvipastoral system
- d. None of these

Part 2: Fill in the blanks with appropriate answers.

(5×1=5 Marks)

- (1) Simultaneous use of surface and ground water is.....use of water.
- (2) The areas which suffer from non- availability of groundwater due to perennial over draft are known as
- (3)advices and encourages developing countries to reduce deforestation.
- (4) Presence of excess water in or near the root zone or standing water above the soil surface for any substantial period of time known as.....
- (5) Deposition of sand particles on the agricultural fields due to natural calamities is termed as sand casting.....

Part 3: True or False (10×1 =10 Marks)

- (1) Lining of canals and water courses can reduce seepage losses of water. (True/False)
- (2) Green manuring is a cheap alternative to the use of fertilizer phosphorus. (True/False)
- (3) Causes of deforestation are rooted in a complex web of social, economic and institutional problems. (True/False)
- (4) An Agro-forestry system is more acceptable than tree farming alone. (True/False)
- (5) Contamination of food and fodder by residues of pesticides, nitrates and antibiotics. (True/False)
- (6) Sustainability is the objective of the farming system. (True/False)
- (7) The source of surface and ground water is rain. (True/False)
- (8) Use of sound crop rotations is a principle of organic farming. (True/False)
- (9) Sustainable Agriculture refers to an agricultural production and distribution system that achieves the integration of natural biological cycles and controls. (True/False)
- (10) In farming system, the farm is viewed in a holistic manner. (True/False)

SECTION- B (Short Answers)

(6×5= 30 Marks)

Answer all the questions. Each question carries 5 marks.

1. Differentiate in brief between principles and characteristics of farming system.
2. Enlist control measures to reduce pesticide pollution.
3. Enlist elements of sustainability in brief.
4. What are adverse effects of modern high- input agriculture?
5. What is significance of forests for ecological balance?
6. Discuss methane emission from rice field with suitable diagram.

SECTION-C (Long answers)

(5×8=40 Marks)

Answer only **five** from the following questions. **Each question carries 8 marks.**

1. Define integrated farming system? Discuss significance or integrating crops and livestock in detail.
2. Define sustainable agriculture. Discuss current concept of sustainable agriculture.
3. Write an essay on nature of damages caused by cyclones to agricultural crops.
4. Fertilizers and Agrochemicals are potential source of pollution. Discuss in detail.
5. What is organic agriculture? Write in detail on need of organic farming.
6. What is biodiversity? Discuss its various levels. How agricultural activities have impacts on biodiversity.
7. What do you mean by global warming? Discuss potential effects of global warming in detail.
8. Define deforestation. Discuss effects of deforestation in detail.

THE END

