



FIJI NATIONAL UNIVERSITY

College of Agriculture, Fisheries & Forestry

Department of Crop Production

School of Agricultural Sciences

Trade Diploma in Agriculture – Year II

Trimester II Final Examination - 2017

AGR: 509 – PROTECTED AGRICULTURE AND ORGANIC FARMING

Total Marks: 100

Time Allowed: Three Hours

[An extra ten minutes is allowed for reading this paper]

INSTRUCTIONS

1. This paper consists of 05 pages. Please check your paper is complete.
2. Write all your answers in the Answer Booklet provided.
3. Write your student number on the front page of your Answer Book.
4. If you use extra sheets of paper be sure to show clearly the number of question being answered and to tie each sheet securely in your Answer Book at the appropriate place.
5. There are three sections in this paper. Sections A and B are compulsory. Note the choices in Section C.
6. There are eight pages in this Question paper.

SUMMARY OF QUESTIONS

Section	Guidelines	Total Marks	Suggested Time
A	Part 1: Multiple Choice Questions. Part 2: Fill in the Blanks. Part 3: True and False. Part 4: Matching.	10	40 minutes
		10	
		10	
		10	
		40 Marks	
B	Short answers Answer all the questions. Each question is worth 3 marks.	30 Marks	50 minutes
C	Long answers Answer only three (3) questions from the following. Answer each question in 250-300 words. Each question carries 10 marks.	30 Marks	90 minutes

SECTION A

[Compulsory]

[40 marks]

- Answer all the four parts in this section.
- Each part is worth 10 marks.

PART .1

MULTIPLE CHOICE

[10 marks]

- A. There are ten multiple-choice questions in this part.
B. All are compulsory.
C. Each question is worth 1 mark.
D. For each question, circle the letter of the **best** answer on the **Answer booklet** provided.

- 1. The modification of the natural environment to achieve a controlled environment and improved plant growth is best defined as**
 - a. protected agriculture.
 - b. protected farming.
 - c. acclimatization.
 - d. climatization.
- 2. Open field conditions for vegetable production is characterized**
 - a. with a shade house.
 - b. without a shade house.
 - c. with planting crops in terraces.
 - d. with planting crops on contour lines.
- 3. Fertigation for intensive vegetable cultivation is**
 - a. applying commercial fertilizer.
 - b. applying chemicals to the soil.
 - c. applying commercial fertilizers mixed with water.
 - d. applying fungicides to the soil.
- 4. Which of the following is an abiotic factor under a greenhouse condition?**
 - a. animals.
 - b. insects.
 - c. plants.
 - d. heat.
- 5. A non-chemical method to combat soil-borne pathogen is**
 - a. soil solarization.
 - b. application of pre-emergence herbicide.
 - c. application of paraquat.
 - d. application of methyl bromide.
- 6. A type of farming system which keeps the soil fertile and in good health by the use of farm wastes is known as**
 - a. plantation agriculture.
 - b. organic agriculture.
 - c. subsistence agriculture.
 - d. commercial agriculture.

7. Which of the following is a disadvantage of organic farming?
- Pests and diseases are easily controlled.
 - It gives low productivity.
 - It does not rely on fertilizers.
 - It gives bigger crops.
8. The growing of leguminous crop in the crop field and incorporating into the soil after sufficient growth before the crop flower is known as
- mixed cropping.
 - crop rotation.
 - intercropping
 - green manuring.
9. Which of the following animal waste contains the highest nutrient content than farm yard manure and compost?
- Ducks.
 - Pigs.
 - Chicken.
 - Sheep or Goats.
10. Which of the following is an example of a concentrated organic manure?
- Meat meal.
 - Compost.
 - Bird droppings.
 - Mulches.

PART 2

Matching

[10 marks]

Match the descriptions in List B with the words in List A.

- Write the letter of the description from List B in the space beside the matching word.

List A

List B

- | | |
|-----------------------------------|---|
| _____ 1. Greenhouse | A. A type of greenhouse structure. |
| _____ 2. Lean-to | B. Are used to raised seedlings under the greenhouse. |
| _____ 3. Containers | C. It is an example of a substrate to raise seedlings. |
| _____ 4. Packaging | D. Is required to get the harvested product from to the production centre to the consumers. |
| _____ 5. Vermiculite | E. Being under stress during the growing season. |
| _____ 6. Bio-fertilizers | F. It protects against heart diseases. |
| _____ 7. Flavonoids | G. Plant and animal wastes that are used as a source of plant nutrients. |
| _____ 8. <i>Sesbania rostrata</i> | H. It is sustainable method of crop production. |
| _____ 9. Manures | I. Is an example of human waste manure. |
| _____ 10. Night soil | J. Being under stress during the growing season. |
| | K. Is an example of a stem nodulating green manure crop. |

Part.3**True and False****[10 marks]**

- Write 'T' if you think that the statement is correct and 'F' if you think it is incorrect.
- Write your answers in the space provided on the right hand side beside each question.

- _____ 1. Shade cloths are used in green houses to protect against plant nutrients.
- _____ 2. All green house structures are the same for all vegetable production.
- _____ 3. Generative growth is the growth associated with fruit production.
- _____ 4. The reflected radiation from the atmosphere increases the green house temperature.
- _____ 5. All fresh vegetables are very perishable and susceptible to infection by a number of post-harvest pathogens.
- _____ 6. Healthy soil produces healthy crop that foster the health of animals and people.
- _____ 7. Conventional agriculture is more environmental friendly.
- _____ 8. Water hyacinth is a green leaf manure crop.
- _____ 9. Bulky organic manures are applied in smaller amounts to the crops.
- _____ 10. Concentrated organic manures have higher nutrient content than bulky organic manures.

Part.4**Fill in the blanks****[10 marks]**

- Fill in the blanks with the appropriate word from the list given below to complete the following statements.
- Do NOT use a word more than once.
- Write your answers in the space provided.

Quonset	Photosynthesis	Training	Mineral
Marketing	Respiration	Mint weed	Vermicomposting
Production	Leaching	Poor	Quality
Fish meal			

1. _____ and transport is a major reason for discontinuation of protected agriculture.
2. In a _____ greenhouse the covering material used is polyethylene.
3. The strategy to maximize _____ is to manage transpiration.
4. Soil _____ status at the start of the growing season is a good starting point for fertilizer recommendation.
5. Plant _____ is when vegetables grown under greenhouse is supported using strings to keep them up right.
6. The performance of organic agriculture for _____ depends on the previous agricultural management system.
7. If carefully managed, losses of nutrients due to _____, soil erosion and gasification can be reduced to the minimum.
8. _____ is a process of using worms to recycle organic material and food scraps into worm compost.
9. _____ is an example of concentrated organic manure.
10. Organic agriculture aims to produce good _____ edible food and other products.

SECTION. B**[Compulsory]****(30 Marks)****SHORT ANSWERS**

- Answer the following questions.
 - Each question is worth 3 marks.
 - There are 10 questions only.
 - Discussing a point is very important to gain full marks.
1. List and discuss at least 3 problems associated with open field vegetable production.
 2. List the 3 variables that are controlled under intensive production system.
 3. List and discuss the three methods by which greenhouses are classified.
 4. List 3 advantages of greenhouse production.
 5. Define the term growth and list 2 methods by which nutrients are recycled in the farming system.
 6. List and discuss at least 3 aspects of ecological sustainability to maintain the biodiversity.
 7. List and discuss the 3 agricultural farming techniques used in organic farming to improve soil fertility.
 8. List the three advantages of green manuring.
 9. List five inputs which are strictly limited for use in organic farming
 10. List the 2 groups of organic manures and list 4 the advantages of bulky organic manures.

Section C**Long Answers****[30 marks]**

- Answer any three (3) questions only.
 - Each question is worth 10 marks.
 - There are 4 questions given.
 - Answer each question in approximately 250-300 words.
1. List and briefly explain the desirable properties to be considered while choosing a suitable substrate.
 2. List and discuss five cultural practices to be observed to have high yields and good quality greenhouse vegetables.
 3. Discuss how recycling of nutrients in organic farms are made possible.
 4. Discuss in detail with positive points on the question given below.
 - I. Is organically produced edible food really healthier?
 - II. Give advantages and disadvantages to support your answer.

THE END