FIJI NATIONAL UNIVERSITY

College of Agriculture, Fisheries & Forestry

School of Agricultural Sciences

Department of Crop Production

Trade Diploma in Agriculture – Year II

IFS 401 INTERGRATED FARMING SYSTEM

Trimester 3 Final Examination - 2017 Total Marks: 100

Time Allowed: Three Hours

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

Instructions:

- This paper consists of **10** pages.
- Answer **ALL** questions in the answer booklet.
- Number your answers correctly.
- Please check to see that your paper is complete.
- Write your student number on all the pages that you use including any additional sheet of paper.
- Printed or written material is not allowed into the examination hall.
- Mark values appear at the end of each question or part thereof.
- Non – programmable calculators are permitted

"MOBILE PHONES ARE STRICTLY NOT ALLOWED"

Section	Guidelines	Total Marks	Suggested Time
A	**Part 1: Multiple Choice Questions.** **Part 2: Matching.** **Part 3: True and False.** **Part 4: Fill in the Blanks**	**20** **10** **10** **10** **50 Marks**	**60 minutes**
B	**Short answers** Answer all the questions. Each question is worth 5 marks .There are six questions.	**30 Marks**	**50 minutes**
C	**Long answers** There **are three** (3) questions in this section. Answer **any two** questions only. Answer each question in 300 words. Each question carries 10 marks.	**20 Marks**	**70 minutes**

SECTION A [50 Marks]

PART 1 MULTIPLE CHOICE [10 Marks]

In the ANSWER BOOKLET provided, circle the letter corresponding to the BEST answer to each of the following question.

1. Integrated Farming System is best defined as

   A. An approach of bringing the different components to interactive relationships.
   B. A supplementary farming of crops and livestock.
   C. An approach of bringing livestock and crops together without any interactions.
   D. It is the rotation of agroforestry with horticulture.

2. Which of the following is not the aim of IFS?

   A. Increase production.
   B. Reduce climate of a region.
   C. Increase balanced food.
   D. Increase Profit.

3. Which of the following is a sustainable farming practice?

   A. Use of methyl bromide.
   B. Use of pesticides.
   C. Integrated pest management.
   D. Mono-cropping.

4. The risk of soil degradation is reduced by

   A. Not practicing conservation.
   B. Mono-cropping.
   C. Horizontal cropping on slopes.
   D. Nutrient recycling.

5. Climate changes due to rising concentration of
   A. Greenhouse gases.
   B. Artificial manures.
   C. Underground water.
   D. None of the above.

6. A type of cropping system where two or more crops are grown in the same field within a given year with a definite row arrangement is known as
   A. Multiple cropping.
   B. Mixed cropping.
   C. Intercropping.
   D. Mono-cropping.

7. Growing of two crops simultaneously on the same piece of land without any definite row arrangement is:

   A. Dual cropping.
   B. Intercropping.
   C. Mixed cropping.
   D. Relay cropping.

8. Food security is defined as the

   A. Enhanced farm income.
   B. Minimizing of environmental pollution.
   C. Effective recycling of resources.
   D. Balanced food supply and effective demand for food.

9. The breaking down of organic materials through the use of worms, bacteria and fungi is known as
   A. Composting.
   B. Coir composting.
   C. Vermicomposting.
   D. Denitrification.

10. The best renewable bio energy used around the world comes from the

   A. Soil.
   B. Rain.
   C. Manure.
   D. Biomass.

11. A parcel of land that, under normal circumstances, supports vegetation that tolerates water-saturated soils is

   A. Wetland farming.
   B. Irrigated farming.
   C. Rain fed farming.
   D. Agroforestry.

12. A place where seeds are grown under controlled environment with a suitable climatic condition is known as

A. Open field.
B. Nursery.
C. Garden.
D. Aeroponics.

13. Which of the following gases is not the component of biogas?

A. Hydrogen.
B. Methane.
C. Argon.
D. Carbon dioxide.

14. Which component of a biodigester provides the function of regulating pressure in the digester tank

A. Digester tank.
B. Inlet.
C. Outlet.
D. Gas delivery system.

15. Which of the following is not the role of livestock in IFS?

A. Food source.
B. Manure source.
C. Transport.
D. None of the above.

16. The growing of only one crop on a piece of land is:

A. One cropping.
B. Multiple cropping.
C. Intercropping.
D. Monocropping.

17. The major component of biogas is:

A. Methane.
B. Carbon dioxide.
C. Nitrogen.
D. Argon.

18. Which of the following is not an input in a farming system?

A. Sowing.
B. Labour.
C. Manure.
D. Rain.

19. This is a physical factor that determines the type of farming system to be taken up in an area

A. Climate.
B. Soil.
C. Capital.
D. Forests.

20. Growing of two crops simultaneously on the same piece of land without any definite row arrangement is:

A. Dual cropping.
B. Intercropping.
C. Mixed cropping.
D. Relay cropping.

PART II **MATCHING** **[10 MARKS]**

INSTRUCTION:

In the "**ANSWER BOOKLET** "provided, write the letter of the statement in **LIST B** that **BEST** corresponds to the phrase in **LIST A.**

	LIST A		LIST B
1	Inputs	A	Without the presence of Oxygen
2	System	B	It includes the cultivation of vegetables, fruits, ornamentals, etc.
3	Process	C	Art of beekeeping.
4	Output	D	These are things that go into the farm.
5	Components	E	These are the products from the farm.
6	Complementary	F	These are things which take place on the farm in order to convert the inputs to output.
7	Sustainability	G	A set of elements or components that are inter related & interacting among themselves.
8	Anaerobic condition	H	Consist of each production unit within a farming system.
9	Apiculture	I	The presence of one enterprise should enhance the quality of another enterprise.
10	Horticulture	J	The ability to meet the needs of today without jeopardizing the ability of future generation to meet their needs.

PART III **TRUE or FALSE** **[10 Marks]**

INSTRUCTION:

In the "ANSWER BOOKLET" provided, write "TRUE" if the statement is correct and "FALSE" if the statement is incorrect.

1. The farming systems are adapted to a particular region due to maximum production.

2. In the integrated farming system, it is always emphasized to combine cropping with other enterprise.

3. The integrated system represents a winning combination that reduces soil erosion.

4. The largest by products of coconut is coconut shell from which coir fiber is extracted.

5. Vermicomposting is the breaking down of organic material through the use of worms, bacteria, and fungi.

6. Biogas is a mixture of gas produced by methanogenic bacteria acting upon bio-degradable materials in anaerobic conditions.

7. A biogas plant is composed of a digester and a gas holder.

8. By combining the enterprises of poultry – cum fish culture with rice cropping system the economic status of the small and marginal farmers could be improved.

9. Strong roots and complex ecosystems does not support wildlife and protect coastal property.

10. Growing fodder legumes and using them as a supplement to crop residue is the most practical and cost-effective method for improving the nutritional value of crop residues.

PART IV FILL IN THE BLANKS [10 Marks]

INSTRUCTION:

- **In the "ANSWER BOOKLET" provided, write the missing word to complete the statement.**

Recycled	**Slurry**	**Ploughing**	**Excreta**	**Rainfall**
Resources	**Fiber**	**Biogas**	**Renewable**	**Leaching**

1. In IFS waste materials are effectively _____ by linking appropriate components, thus minimize environment pollution.
2. _____ is obtained after the production of biogas.
3. Animal power is used for_____, transport and in activities such as milling, logging, road construction, marketing, and water lifting for irrigation.
4. _____ contains several nutrients (including nitrogen, phosphorus and potassium) and organic matter, which are important for maintaining soil structure and fertility.
5. Agro climatic condition such as the quantity, distribution and reliability of_____, Soil type, topography, temperature helps in crop production.etc.
6. Residues, wastes and byproducts of each component serve as_____ for the other enterprises.
7. It is advisable to bring _____ free coir pith for composting.
8. _____ can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste.
9. Biogas is considered to be a _____ source of energy.
10. Soils that have low CEC values lose many nutrients through the _____ process.

SECTION B

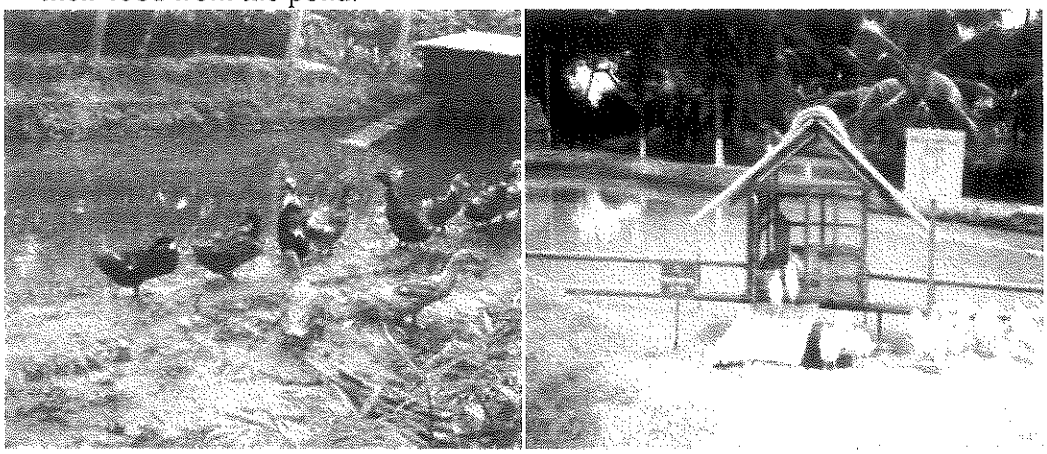
SHORT ANSWER QUESTIONS

[30 Marks]

INSTRUCTIONS:

- This section consists of **six** short answer questions.
- Each question is worth 5 marks.
- Attempt all questions in this section.
- Write your answers in the "answer booklet" provided.
- Begin each question on a new page.

1. Determine five components of integrated farming system.
2. Interpret five advantages of integrated farming system.
3. Apply five benefits of vermi-composting.
4. Determine five benefits of anaerobic digestion in biogas production.
5. Specify the type of farming system given below and briefly explain how fish derive their food from the pond.



6. Why farming systems are adapted to a particular region.

SECTION C

ESSAY QUESTIONS **[20 Marks].**

INSTRUCTIONS:

1. This section consists of **two** long answer questions
2. Write your answers in the "answer booklet" provided.
3. Begin each question on a new page.
4. Attempt **only two** questions out of **three** given.

1. Relate and apply five (5) constraints of integrated farming system.

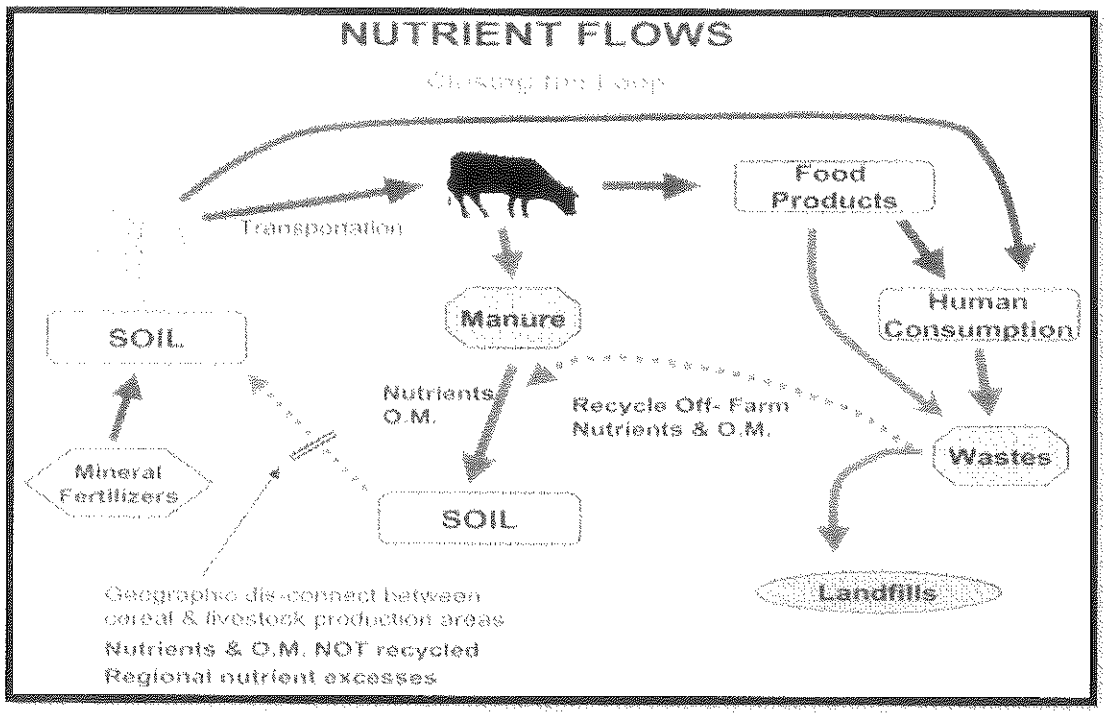
(10 marks)

2. Determine and interpret five different types of cropping systems you have studied.

(10 marks)

3. Using the diagram given below specify nutrients flow in an ecosystem.

(10 marks)



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