



FIJI NATIONAL UNIVERSITY

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY
SCHOOL OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE & AGRIL CHEMISTRY
FINAL EXAMINATION: 2017

Trade Diploma in Agriculture year 2, Trimester 1

MANURE FERTILIZER AND SOIL FERTILITY MANAGEMENT
(SAC 505)

TOTAL MARKS: 100

TIME ALLOWED: 3:10 HOURS

This paper consists of seven (7) pages, please check to see that your paper is complete.

Instructions

Answer all questions in the answer booklet

- Number your answers correctly in the provided answer booklet.
- Write your student ID number on all pages including additional sheets.
- Write your student ID number on question paper.
- Don't write answers on question paper; write answers only in answer booklet.

“MOBILE PHONES ARE STRICTLY PROHIBITED IN THE EXAMINATION HALL”

PART	TYPE		TOTAL MARKS
I	MULTIPLE CHOICE ANSWERS	10 x 1	10
II	TRUE OR FALSE	11 x 1	11
III	FILL IN THE BLANKS	11 x 1	11
IV	DEFINITIONS/SHORT ANSWERS	6 x 3	18
V	DESCRIPTIVE QUESTIONS	5 x 7	35
VI	ESSAY QUESTION	1 x 15	15
TOTAL MARKS			100

PART I: MULTIPLE CHOICE ANSWER

10 x 1 = 10 marks

1. One function of organic manure is:
 - a) Organic matter improves the physical condition of the soil, particularly the structure.
 - b) It plays an important role in the nutrient supplying power of soil as it has got high cation exchange capacity (CEC)
 - c) It increases the water holding capacity of the soil, particularly in sandy soils.
 - d) All of the above
2. One method of farm yard manure preparation is:
 - a) Pit Method
 - b) Trench Method
 - c) Heap Method
 - d) All of the above
3. Vermicomposting is a nutrient rich compost which:
 - a) helps better plant growth and crop yield
 - b) Improves physical structure of soil.
 - c) enriches soil with micro-organisms
 - d) all of the above
4. The nitrogen content in the vermicomposting is :
 - a) 1.7%
 - b) 0.2%
 - c) 0.5%
 - d) None of the above
5. One of the physical method of land reclamation is:
 - a) Sub soiling
 - b) Deep ploughing
 - c) Sanding
 - d) All of the above

6. The amount of water required for reclamation, usually depends upon :
- a) Salts concentration
 - b) Soil texture
 - c) Soil structure
 - d) All of the above
7. One of the prerequisites for land reclamation is:
- a) Good surface drainage
 - b) Leveled soils
 - c) Availability good quality water
 - d) All of the above
8. One of the sources of calcium for replacing exchangeable sodium is:
- a) Irrigation water
 - b) Gypsum and lime present in soil
 - c) High-salt water
 - d) All of the above
9. One advantage of bio fertilizers is:
- a) sustain soil health
 - b) supplement chemical fertilizers
 - c) solubilize and mobilize nutrients
 - d) All of the above

10. One criteria used for judging essentiality of elements is :
- a) needed for the plant to complete its life cycle.
 - b) a part of any molecule or constituent of the plant that is itself essential.
 - c) deficiency symptoms appear in the absence of the element.
 - d) All of the above

PART 11: TRUE OR FALSE

11x 1 = 11 marks

- 1. FYM can supply all the nutrients required by the plant, however with high quantity.
- 2. Fertilizers are available in both organic as well as inorganic forms.
- 3. Pore space is the fragments of rock and mineral in the soil.
- 4. Solid matter is the space around the soil particles. .
- 5. Reclamation of saline soil is done by applying right amount of water to the soil surface.
- 6. Vermicompost is a nutrient rich compost which decrease water holding capacity of soil.
- 7. There are 27 essential elements that are required by plants in order to grow well.
- 8. Macronutrients are nutrient that are required by plants in small amounts.
- 9. Windrows Method is a method of Vermicomposting production.
- 10. Rice is one of the crop that absorbs nitrogen in nitrate form.
- 11. Fertilizers are applied to supply nutrients required by the crop that are taken up from the air.

PART III: FILL IN THE BLANKS

11 x 1 = 11 marks

1. One type of green manuring is _____
2. One variety of Earthworms used for vermicomposting is _____
3. One type of composting is _____
4. The growths of green manure crops are very _____ compare to other crop.
5. _____ is a technology of composting various forms of biodegradable wastes with the help of earthworms.
6. Green manure ring contributes about _____ kg nitrogen per hectare.
7. The microorganisms that perform the composting process require _____ to survive.
8. _____ fertilizers are those which supply only one primary plant nutrient
9. _____ fertilizers contain two or three primary plant nutrients.
10. Green manuring is the practice of growing and ploughing in, the green crops, into the _____.
11. One Function of organic manure is _____

PART IV: ANSWER ONLY SIX (6) FROM THE FOLLOWING 6x3 = 18

marks

1. Define what is bin composting.
2. Define what is Manure
3. Define farm yard manure
4. Define what is compost
5. Define what is Tumbler composting
6. Define what is fertilizer
7. Define what is composting
8. Define what is Liquid fertilizers

PART V: ANSWER ANY 5 FROM THE FOLLOWING 5 x 7 = 35

1. Briefly discuss the role of organic manure.
2. Differentiate between organic fertilizer and chemical fertilizer
3. Differentiate between active composting and passive composting.
4. Briefly explain three beneficial effects of farm yard manure.
5. Briefly discuss two ways in minimizing losses from FYM during handling
6. Briefly discuss two advantages of compost.

PART VI: ANSWER ANY 1 FROM THE FOLLOWING

1x15 = 15 marks

1. Compost is one of the major organic manures derived from the decompose plant residues:
 - a) Lists five types of compost and b) Briefly explain the process in compost making step by step , starting with a brief introduction, material used and steps in composting making and finally a brief conclusion.

OR

2. Briefly discuss what s aerobic compost and discusses five (5) aerobic key components.

END OF THE PAPER

