
COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY (CAFF)
SCHOOL OF AGRICULTURAL SCIENCES
DEPARTMENT OF SOIL SCIENCE & AGRICULTURAL ENGINEERING
BACHELOR OF SCIENCE IN AGRICULTURE-YEAR 1

FINAL EXAMINATION

Trimester III, 2017

SAC 602 MANURES AND FERTILIZERS

TOTAL MARKS: 100

TIME DURATION: 3 HOURS

INSTRUCTIONS TO STUDENTS

1. This paper consists for 06 pages. Please check to see that your paper is complete.
2. You are allowed 10 minutes extra reading time in which you are NOT permitted to write.
3. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
4. Use both sides of the answer sheet and write your candidate number on each sheet.
5. Write clearly the number(s) of the question(s) attempted on the top of each sheet.

MOBILE PHONES ARE STRICTLY NOT ALLOWED

SECTION	PARTICULARS	TOTAL MARKS	THE ALLOCATIONS
A	Part 1: Fill in the Blanks Part 2: True and False Part 3: Multiple Choices Part 4: Write full form Part 5: Write examples	40	40 minutes
B	Short answers	20	50 minutes
C	Long answers	40	90 minutes
	Total	100	

SECTION -A

There are four parts in this section. All the questions are compulsory.

Part 1: Fill in the blanks with appropriate answer.

(10X1=10 Marks)

- 1) A total _____ nutrients are essential to plants.
- 2) Soil may be fertile but may not be _____.
- 3) _____ is a mixed fertilizer.
- 4) _____ is a symbiotic N-fixing bacteria found in legumes.
- 5) _____ is an amide fertilizer.
- 6) The deficiency symptoms of _____ are stunted growth, leaf distortion, necrotic spots, shoot tip death and blossom-end rot in tomato.
- 7) The deficiency symptoms of _____ are interveinal chlorosis on new growth as this nutrient is immobile in plants.
- 8) Urea [$\text{NH}_2\text{-CO-NH}_2$] is the most concentrated solid nitrogenous fertilizer, containing _____ per cent nitrogen.
- 9) FYM is having _____ N percentage.
- 10) Residual effect of manure is _____ as compared to fertilizer.

Part 2: Mark True of False

(10 X 1 =10 Marks)

1. Green manure covers the soil in between successive grain crops, thus protecting the soil against wind and water erosion. (True/False)
2. Sodium chloride is popularly known as muriate of potash [MOP]. (True/False)
3. Single super phosphate contains (19-20%) of P_2O_5 . (True/False)
4. Concentration of plant nutrient is low in fertilizers (True/False)
5. Iron fertilizers are generally water soluble substances, predominantly sprayed as foliar nutrients on the crops.(True/False)
6. Complex fertilizers are the fertilizers containing two or more major plant nutrients, which are in chemical combination. (True/False)
7. Broadcasting of fertilizers in the standing crop (after emergence of crop) is known as

- top-dressing. (True/False)
8. Phosphorus is immobile in plant tissues so its deficiency occurs in older leaves.
(True/False)
9. Potassium is the nutrient responsible for pungency and flavor in onion, garlic and mustard (True/False)
10. The deficiency symptom of Iron occurs at high pH, while toxicity occurs at low pH
(True/False)

Part 3: Write the letter of your choice

(5 X 1=5 Marks)

1. Which is the most important green manure crop?

- A. Sunhemp (*Crotalaria juncea*)
- B. Dhaincha (*Sesbania aculeata*)
- C. Pillipesara (*Phaseolus trilobus*)
- D. All of these

2. Which of the following nutrient replenish the soil after growing leguminous plants?

- A. Nitrogen
- B. Oxygen
- C. Phosphorus
- D. Potassium

3. In an average well decomposed FYM (Farmyard manure) contains

- A. 0.5% N₂
- B. 0.2% P₂O₅
- C. 0.5% K₂O
- D. All of these

4. Why would you NOT want to use compost as mulch?

- A. It's unsanitary
- B. It attracts squirrels, ants, and other critters looking for food
- C. The nutrients are too concentrated and will kill the plant
- D. The nitrogen evaporates into the air instead of the soil

5. _____ fertilizer contains 46 per cent P₂O₅ and this fertilizer is suitable for all crops and all soils. In acid soils, it should be used in conjunction with organic manure

- A. Single super phosphate
- B. Triple super phosphate
- C. Potassium sulphate
- D. All of these

(5X1=5 Marks)

Part 4: Write down the full forms for the abbreviations of the following fertilizers

1.	CAN
2.	DAP
3.	TSP
4.	SSP
5.	MOP

Part 5: Write any two (2) examples of the following:

(10X1 = 10 Marks)

S.No	Column A	Write Two(2) Examples
1.	Nitrogenous fertilizers	
2.	Phosphatic fertilisers	
3.	Potassic fertilizers	
4.	Complex fertilizers	
5.	Micronutrient Fertilizers	
6.	Primary nutrient	
7.	Secondary nutrient	
8.	Micronutrient	
9.	Bulky organic manure	
10.	Concentrated organic manure	

Section-B

Short answers

(5 X4=20 Marks)

- 1) Compare the difference in any 2(two) of the following groups.
 - a. Composting and vermicomposting
 - b. Green manure and compost
 - c. Immobilization and mineralization
 - d. Denitrification and nitrification
- 2) Define any two (2) of the following.
 - a. Straight Fertilizers
 - b. Complex fertilizers
 - c. Broad casting of fertilizers
 - d. Topdressing of fertilizer application
- 3) What do the numbers on the fertilizer bags mean? What is the difference between a macronutrient and a micronutrient?
- 4) What are the three criteria that plant nutrients must meet to be designated as essential?
- 5) In what forms calcium and magnesium are absorbed by plants? What are the deficiency symptoms of calcium and magnesium?

Section-C

Long answers

(4 X10=40 Marks)

Answer only four (4) questions from the following.

1. What is green manure? Compare different green manures, their advantages and limitations?
2. Organic manure is considered to be better than fertilizers. Evaluate the statement in detail.
3. Discuss classification of fertilizers. Compare properties of major nitrogenous fertilizers in detail.
4. Discuss with example, how improper nutrition affects crop quality.
5. Rate the advantages and disadvantages of using bio fertilizers over chemical fertilizers.
6. Write short notes:
 - a. Concentrated organic manure
 - b. Bio-fertilizer
 - c. Potassic fertilizers
 - d. Fast release nitrogen fertilizers

THE END