

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY (CAFF)**Department of Soil Science & Agricultural Chemistry****School of Agricultural Sciences****Bachelor of Science in Agriculture/Bachelor of Education Agriculture Science –Year 1**

FINAL EXAMINATION**Trimester III, 2016****SAC 602 MANURES AND FERTILIZERS****TOTAL MARKS: 50****TIME DURATION: 3 HOURS****INSTRUCTIONS TO STUDENTS**

1. You are allowed 10 minutes extra reading time in which you are NOT permitted to write.
2. This paper consists of four (4) pages. Please check to see that your paper is complete.
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.
6. Candidates are not allowed to carry any textual material, printed or written material, bits of papers, inside the Examination Room/Hall.

“MOBILE PHONES ARE STRICTLY NOT ALLOWED”

SECTION	PARTICULARS	TOTAL MARKS
A	Part 1: Fill in the Blanks Part 2: True and False Part 3: Short answers	20
B	Part 4: Long answers	30
	Total	50

SECTION -A

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

Part 1: Fill in the blanks with appropriate answer. (10X0.5=5 Marks)

- 1) N percentage of FYM is _____ percent.
- 2) In the potassic fertilizers, the *Latin* word for the element potassium with symbol K is _____.
- 3) Manures are classified on the basis of their nitrogen content and _____ present on the soil.
- 4) _____ is one of the oldest manure used by the farmers in growing crops because of its easy availability and presence of all the nutrients required by the plants.
- 5) The deficiency symptoms of _____ are yellowing of mature lower leaves as this nutrient is highly mobile in plants.
- 6) The deficiency symptoms of _____ are interveinal chlorosis on new growth as this nutrient is immobile in plants.
- 7) Urea [$\text{NH}_2\text{-CO-NH}_2$] is the most concentrated solid nitrogenous fertilizer, containing _____ per cent nitrogen.
- 8) _____ is the clear supernatant liquid obtained after aeration during sedimentation process in the septic tanks of the activated sludge process.
- 9) _____ oil cake is the oldest phosphatic fertilizer.
- 10) _____ can act effectively only when soil has optimum structure and soil reaction.

Part 2: Mark True of False

(10 X 0.5 =5 Marks)

1. Moisture content of FYM is 60-75 % (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. Sewage refers to the used up water from towns and cities collected through a drainage system. (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. Ammonium chloride (NH₄Cl) is usually not recommended for tomato, tobacco and such other crops as may be injured by chlorine. (True/False)
 9. Localized placement is the application of fertilizers into the soil close to the seed or plant. It is usually employed when relatively small quantities of fertilizers are to be applied. (True/False)
 10. MOP is neutral in reaction and does not produce acidity and alkalinity on soil application. (True/False)

Part 3: Short answers

(5 X 2=10 Marks)

Explain the difference between any five (5). Each carries 2 marks.

1. Manures and fertilizers.
2. Broadcasting and topdressing of fertilizers
3. Composting and vermicomposting
4. Green manuring *insitu* and Green leaf manuring
5. Macro and micronutrient
6. Bulky organic manures and Concentrated organic manures
7. Straight and complex fertilizer

Section-B

Part 4: (Long answers)

(5 X6 =30 Marks)

Answer only five (5) questions from the following. Answer each in 300 words. Each question carries 6 marks.

- (1) Explain importance of manures in soil fertility management.
- (2) Explain methods of fertilizer application in detail.
- (3) What are bulky organic manures? Examine FYM in detail.
- (4) What is green manuring? Classify green manures. Enlist advantages and limitations of green manuring?
- (5) What are criteria of essentiality? Classify plant nutrient on the basis of essentiality.
- (6) Discuss classification of fertilizers. Explain the nitrogenous fertilizers and properties of major nitrogenous fertilizers in detail.
- (7) In your opinion what's better for the environment, fertilizing with synthetic fertilizer or with animal manure? Are they both the same once you put them on the soil? Explain your answer in detail.
- (8) What are phosphatic fertilizers? Classify phosphatic fertilizers and discuss physical and chemical properties of any two phosphatic fertilizers in detail.

THE END