



**COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY**

School of Agricultural Sciences and Forestry

Department of Soil Science & Agricultural Engineering

Trade Diploma in Agriculture–Year 2

**SAC 505: Manures, Fertilisers & Soil Fertility Management**

**Trimester I, 2018 Final Examination**

**TOTAL MARKS: 100**

**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 six (6) pages.
3. Please check to see that your paper is complete.
4. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
5. Use both sides of the answer sheet and write your candidate number on each sheet.
6. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
7. 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”**

<b>SECTION</b>	<b>PARTICULARS</b>	<b>TOTAL MARKS</b>
A	Part 1: Fill in the Blanks Part 2: True and False Part 3: Multiple Choice Part4: Matching	50
B	Part 4: Short answers Part 5: Long answers	50
	<b>Total</b>	<b>100</b>

## SECTION -A

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

Part 1: Fill in the blanks with appropriate answer. (15X1=15 Marks)

1. \_\_\_\_\_ covers the soil in between successive grain crops, thus protecting the soil against wind and water erosion.
2. \_\_\_\_\_ is popularly known as muriate of potash MOP.
3. Single super phosphate contains \_\_\_\_\_ of  $P_2O_5$ .
4. Concentration of plant nutrient is \_\_\_\_\_ in fertilisers.
5. \_\_\_\_\_ fertilisers are the fertilisers containing two or more major plant nutrients, which are in chemical combination.
6. \_\_\_\_\_ fertiliser usually not recommended for tomato, tobacco and such other crops as may be injured by chlorine.
7. \_\_\_\_\_ is neutral in reaction and does not produce acidity and alkalinity on soil application.
8. \_\_\_\_\_ is the most concentrated solid nitrogenous fertiliser containing \_\_\_\_\_ per cent nitrogen.
9. \_\_\_\_\_ of young animals are not so rich like that of matured animals.
10. \_\_\_\_\_ can act effectively only when soil has optimum structure and soil reaction.
11. FYM is having \_\_\_\_\_ N percentage.
12. Residual effect of manure is \_\_\_\_\_ as compared to fertiliser.
13. \_\_\_\_\_ manures, often known as cover crops.
14. \_\_\_\_\_ of a soil is defined as its capacity to produce plants under specified programme of management.
15. \_\_\_\_\_ is naturally occurring and easy to prepare for increasing organic matter in soil.

**Part 2: Mark True of False**

**(10 X 1 =10 Marks)**

1. Soil may be fertile but may not be productive.
2. Fertilisers are the materials of biological (organic) origin that are applied commonly to maintain and improve soil fertility.
3. FYM 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.
4. The deficiency symptoms of phosphorus are yellowing of mature lower leaves as this nutrient is highly mobile in plants.
5. The deficiency symptoms of calcium are interveinal chlorosis on new growth as this nutrient is immobile in plants.
6. The deficiency symptoms of potassium are leaf margin necrosis and browning of older leaves.
7. Straight fertilisers are those which supply only one primary plant nutrient, namely nitrogen or phosphorus.
8. Liquid form fertilisers are applied with irrigation water or for application.
9. Iron fertilisers are generally water soluble substances, predominantly sprayed as foliar nutrients on the crops.
10. Manures are classified as straight, complex and mixed.
11. Fertilisers are applied to supply nutrients required by the crop that are taken up from the soil.
12. Amide fertilisers are readily soluble in water and easily decomposable in the soil.
13. Oil cakes are of three type edibibe, non-edible and slight edible.
14. Bone meal is bulky organic manure.
15. Fertilisers maintain and improve soil structure.

**Part 3: Write the letter of your choice.**

**(10 X 1=10 Marks)**

1. A criterion of essentiality of nutrients for plants was given by \_\_\_\_\_.
  - A. Arnon
  - B. Einstein
  - C. Darcy
  - D. Liebig
2. Which of the following is bulky organic manure?
  - A. nitrogen fertiliser
  - B. farm yard manure
  - C. potash fertiliser
  - D. oilcake
3. Where is the best place to put a compost pile?
  - A. sheltered spot
  - B. under trees and shrubs
  - C. both a & b
  - D. none
4. The organic substance obtained from dead plants an animal wastes is \_\_\_\_\_.
  - A. manure
  - B. fertiliser
  - C. irrigation
  - D. agriculture
5. Compost pile has an offensive odour because?
  - A. too much "green" stuff (ammonia smell)
  - B. too little air (rotten-egg smell).
  - C. both of the above
  - D. none of the above
6. Fertilisers can also be classified based on physical form into \_\_\_\_\_.
  - A. solid
  - B. liquid
  - C. gas
  - D. semisolid
7. \_\_\_\_\_ of a soil is defined as its capacity to produce plants under specified programme of management.
  - A. fertility
  - B. productivity
  - C. development
  - D. all of these

8. \_\_\_\_\_ fertiliser contains 46 per cent  $P_2O_5$  and this fertiliser is suitable for all crops and all soils. In acid soils, it should be used in conjunction with organic manure.

- A. single super phosphate (SSP)
- B. triple super phosphate (TSP)
- C. potassium sulphate ( $K_2SO_4$ )
- D. all of these

9. Classification of Green manuring is \_\_\_\_\_.

- A. green manure in situ
- B. green leaf manuring
- C. vermicomposting
- D. all of these

10. Vermicomposting is done by \_\_\_\_\_.

- A. fungus
- B. bacteria
- C. worms
- D. animals

Match the Following:

(10 X 1=10 Marks)

Column A		Column B
a. Urea	1.	Concentrated organic manure
b. Zinc fertilisers	2.	Slow acting foliar nutrient
c. Triple super phosphate	3.	Urea
d. Bonemeal	4.	Amide fertiliser
e. Straight fertiliser	5.	Phosphatic fertiliser
f. FYM	6.	Bulky organic manure
g. Organic manure	7.	Vermicompost
h. Complex fertiliser	8.	Deficiency symptom is yellowing of leaves
i. Green manure	9.	<i>Sesabania aculeata</i>
j. Nitrogen	10.	Diammonium phosphate

**Part 4: (Short answers)**

**(5 X2=10 Marks)**

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

1. Composting and vermicomposting
2. Straight and complex fertiliser
3. Green manure and compost
4. Manure and fertiliser
5. Soil fertility and soil productivity

**Section-B**

**Part 5: (Long answers)**

**(4 X15=60 Marks)**

**Answer only four (4) questions from the following. Answer each in 300 words**

1. Explain organic manure is better than chemical fertiliser. Give reasons.
2. Explain fertilizer placement method of application.
3. What is green manuring? Classify green manures. Enlist advantages and limitations of green manuring?
4. Classify plant nutrient on the basis of essentiality.
5. Discuss classification of fertilisers. Explain nitrogenous fertiliser and properties of major nitrogenous fertilisers in detail.

**THE END**