Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18AG2020** | **Duration :** | **3hrs** |
| **Sub. Name:** | **MANURES, FERTILIZERS AND SOIL FERTILITY**  **MANAGEMENT** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (20 X 1 = 20 MARKS)** | | | |
| 1. | Soil application of organic manures improves \_\_\_\_\_\_\_\_\_   , \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ properties of the soil. | CO2 | 1 |
| 2. | \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ are the green manure crops and  \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_are the green leaf manure crops. | CO2 | 1 |
| 3. | Fertilizers are usually \_\_\_\_\_\_ in nature, but Urea fertilizer is \_\_\_\_\_\_\_\_\_\_\_ in nature. | CO1 | 1 |
| 4. | Write two examples each for bulky organic manures and concentrated organic manures. | CO2 | 1 |
| 5. | Define:  Integrated Nutrients Management (INM). | CO2 | 1 |
| 6. | Define:C / N ratio of an organic manure and give an example. | CO1 | 1 |
| 7. | Define:Complex fertilizer and give an example. | CO1 | 1 |
| 8. | Write two examples for slow release nitrogenous fertilizers. | CO1 | 1 |
| 9. | SSP contains \_\_\_\_\_\_\_\_\_\_\_\_ %  P2O5 and DAP contains  \_\_\_\_\_\_\_\_\_\_\_ % N and \_\_\_\_\_\_\_\_\_\_\_\_ %   P2O5 | CO1 | 1 |
| 10. | Write two inorganic potash fertilizers and mention their % of K2Ocontent. | CO1 | 1 |
| 11. | Secondary nutrients are   \_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_   and \_\_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 12. | Gypsum supplies  \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ plant nutrients. | CO2 | 1 |
| 13. | \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_  are fertilizers which supply Boron  and Molybdenum micronutrients respectively. | CO2 | 1 |
| 14. | \_\_\_\_\_\_\_\_ is a complex water soluble fertilizer being recommended for drip fertigation. | CO2 | 1 |
| 15. | In which year, the Fertilizer Control Order (FCO) came in to force under government Rules. | CO2 | 1 |
| 16. | \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ are mobile and  \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ are immobile  plant nutrients. | CO3 | 1 |
| 17. | \_\_\_\_\_\_\_\_\_ is a plant nutrient that stimulates plant’s root formation. | CO3 | 1 |
| 18. | \_\_\_\_\_\_\_\_\_,   \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_ are the essential plant nutrients that help in chlorophyll formation. | CO3 | 1 |
| 19. | \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ are the available form of phosphorus nutrient in soil. | CO3 | 1 |
| 20. | Deficiency symptom of zinc nutrient in rice crop is called \_\_\_\_\_\_\_\_\_\_\_\_\_. | CO3 | 1 |

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| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Write the importance of organic manures on soil fertility improvement. | CO1 | 5 |
| 22. | What is INM? Write short notes on INM. | CO2 | 5 |
| 23. | Write briefly the classification, composition and properties of Phosphotic fertilizers. | CO2 | 5 |
| 24. | Write a note on Nano fertilizers. | CO2 | 5 |
| 25. | What are the various soil amendments for different problematic soils and their reclamation procedures? | CO1 | 5 |
| 26. | What are known as plant nutrients? Write down three criteria for the essentiality of an element or nutrient. | CO2 | 5 |
| 27. | What are the factors that affect the nutrients availability to plants from soil? | CO2 | 5 |
| 28. | Write briefly on the various forms of nutrients available to plants in soil. | CO3 | 5 |
| 29. | What are the factors that affect the nutrients use efficiency (NUE)? | CO3 | 5 |
| 30. | What are the physiological role of major nutrients in plant system? | CO3 | 5 |
| 31. | Write the mechanisms of nutrients transport to plant system. | CO3 | 5 |
| 32. | What is soil fertility? What is meant by essential plant nutrients? | CO3 | 5 |

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| **PART – C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
| 33. | a. | Write down the classification, composition and properties of nitrogenous fertilizers. | CO2 | 7 |
| b. | Write down the classification, composition and properties of secondary nutrients fertilizers. | CO2 | 8 |
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| 34. | a. | Write notes on deficiency and toxicity symptoms of essential plant nutrients and their corrective measures. | CO3 | 8 |
| b. | Describe the chemistry of soil sulphur and micronutrients. | CO2 | 7 |
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| 35. | a. | Write an essay on the various methods of soil fertility evaluation. | CO3 | 7 |
| b. | Write an essay on the various methods of fertilizers application under rainfed and irrigated conditions. | CO2 | 8 |