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

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **18AG1013** | **Duration :** | **3hrs** |
| **Sub. Name :** | **FUNDAMENTALS OF SOIL SCIENCE** | **Max. marks :** | **100** |

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| **Q.No.** | **Questions** | **Course Outcome** | **Marks** |
|  | **PART-A(20X1=20 MARKS)** | | |
| 1. | What is meant by Humification? | CO4 | 1 |
| 2. | Differentiate Soil structure and soil texture | CO2 | 1 |
| 3. | Mention any three Sulphur containing minerals | CO1 | 1 |
| 4. | Write an example for Primary mineral | CO1 | 1 |
| 5. | Give the size specification for four soil particles | CO2 | 1 |
| 6. | What is the difference between Pedology and Edaphology | CO1 | 1 |
| 7. | List out the processes of soil formation | CO1 | 1 |
| 8. | Give an example for 1:1, 2:1, 2:1:1type of clay minerals | CO1 | 1 |
| 9. | What is the organic carbon content of SOM? | CO4 | 1 |
| 10. | Who proposed first scientific classification of soils? | CO2 | 1 |
| 11. | Name the active soil forming factors. | CO1 | 1 |
| 12. | What is soil organic matter? | CO4 | 1 |
| 13. | Mention any four soil enzymes | CO4 | 1 |
| 14. | Define soil catena? | CO2 | 1 |
| 15. | What are the different types of pesticides ? | CO4 | 1 |
| 16. | Name any four diagnostic surface horizons. | CO3 | 1 |
| 17. | Define soil pH and list out the types of acidity. | CO3 | 1 |
| 18. | a.What forms the skeleton of soil  b. What is meant by BSP? | CO2  CO3 | 1 |
| 19. | Define chelation ? | CO4 | 1 |
| 20. | What is meant by CEC? | CO3 | 1 |

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|  | **PART B(10 X 5= 50 MARKS)**  **(Answer any 10 from the following)** | | |
| 21. | Write down the classification of rocks based on formation? | CO1 | 5 |
| 22. | Enumerate the assumptions of stroke’s law. | CO2 | 5 |
| 23. | Explain the factors affecting Bulk Density and Porosity of soil. | CO2 | 5 |
| 24. | Define soil aeration? Elucidate the reasons for poor aeration? | CO4 | 5 |
| 25. | a.List out the sources of soil heat and factors influencing soil temperature?  b. How will you determine the soil colour and explain in detail about components of soil colour? | CO4  CO2 | 5 |
| 26. | Explain about 1:1 and 2:1 type silicate clay mineral with suitable examples. | CO1 | 5 |
| 27. | Describe Ion Exchange in soils. | CO3 | 5 |
| 28. | Mention the Kinds of soil pollution and briefly explain about inorganic contaminants? | CO4 | 5 |
| 29. | Elucidate the methods of soil moisture determination ? | CO2 | 5 |
| 30. | Describe passive soil forming factors. | CO1 | 5 |
| 31. | Discuss about soil classification based on Zonality concept? |  | 5 |
| 32. | What are the functions of soil microorganisms in relation to soil health ? | CO4 | 5 |

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|  | **PART C(2 X 15= 30 MARKS)**  **(Answer any 2 from the following)** | | | |
| 33. | a. | Factors affecting soil structure and their role in maintaining soil physical properties? | CO2 | 8 |
| b. | Classification of soil water? | CO2 | 7 |
|  |  |  |  |  |
| 34. | a. | Explain physical and chemical weathering? | CO1 | 10 |
| b. | General properties of soil colloids? | CO4 | 5 |
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| 35. | a. | Briefly describe the role of soil organic matter on soil health and strategies to improve it. | CO4 | 8 |
| b. | Classify the primary silicate minerals with examples. | CO1 | 7 |