

Seat No: \_\_\_\_\_

Enrollment No: \_\_\_\_\_

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**

**B.Sc. (Hons.) Agriculture Summer 2022 - 23 Examination**

**Semester: IV**

**Date: 14-03-2023**

**Subject Code: 20103252**

**Time: 10:30AM TO 10:00PM**

**Subject Name: Problematic Soils and Their Management**

**Total Marks: 50**

**Instructions**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Do as Directed.**

1. C:N ratio of Indian soil is ..... (05)
2. Salt affected soils occur in the .....region.
3. If the soil pH is 4.5 than called.....
4. Water erosion is .....type of erosion.
5. Gypsum is commonly used for .....soil.
6. ....Erosion is controlled by normal tillage.
7. Ammonium sulphate contain .....N.
8. ....is used for reclamation of acid soil.
9. Acidic soil is commonly found in .....rainfall regions.
10. .... is commonly deficient in Acidic soils.

**B. Multiple choice type questions. (Each of 0.5 mark)**

1. The Ca and Mg are deficient found in \_\_\_\_\_ soil (10)
  - a) sodic
  - b) acid soil
  - c) Alkali soil
  - d) all above
2. Clay soil are made up of about \_\_\_\_\_% clay particles in soil
  - a) 35%
  - b) 40 %
  - c) 20%
  - d) 50%
3. Management of acid soils can be reclaimed by addition of
  - a) Gypsum
  - b) CaCO<sub>3</sub>
  - c) Both a and B
  - d) None of these
4. pH of spent wash is
  - a) 1.2 to 2.2
  - b) 3.8 to 4.2
  - c) 4.2 to 5.2
  - d) 6.2 to 6.4
5. Geological erosion is also known as
  - a) Soil erosion
  - b) Water erosion
  - c) Accelerated erosion
  - d) All of these
6. Which Element are toxic effects refers of Saline-alkaline soil.
  - a). Ca
  - b). Na
  - c). Zn
  - d). B
7. Water logged area may be more .....state
  - a). Andhra Pradesh
  - b). West Bengal
  - c). Gujarat
  - d). Haryana

8. The process by which the saline soil formed is called  
 a) Laterization c) both a and b  
 b) Salinization d) Acidification
9. The element which is measured by flame photo meter  
 a) N c) S  
 b) K d) All of these
10. Good soil tilth is a characteristic at  
 a) problematic soil c) fertile soil  
 b) healthy soil d) Productive soil.
11. Spectrophotometer is used for measurement of \_\_\_\_\_ nutrients  
 a) Phosphorous c) a & b both  
 b) Sulphur d) None of these
12. The Major deposit of gypsum is found in \_\_\_\_\_ state.  
 a) Gujarat c) Madhya Pradesh  
 b) Rajasthan d) None of these
13. Which of the following the first phase of water erosion\_\_\_\_\_.  
 a) Sheet erosion (c) Rill erosion  
 b) Splash erosion (d)Gully erosion
14. Near the canal banks soil become  
 a) Acidic c) Calcareous  
 b) Alkali d) All of Above
15. Which nutrient is available at neutral pH  
 a) P c) Fe  
 b) N d) Al
16. If the application of Gypsum in acidic soil pH will be  
 a) Increase c) Decrease  
 b) constant d) None of these
17. When alkali soil also in submerged condition  
 a) Flocculated c) A & B  
 b) De-flocculated d) All of these
18. Soil have pH > 8.5, ESP > 15.0 and EC > 4.0 dS/m is also called  
 a) Saline-sodic Soil c) Saline-Sodic soil  
 b) Alkali Soil d) All of the above
19. The use of CaCO<sub>3</sub>  
 a) Saline Soil c) Acidic Soil  
 b) Alkali Soil d) None of these
20. Clay soil are \_\_\_ in hydraulic conductivity.  
 a) High b) Both a and b  
 c) Very Low d) Medium

**Q.2. Do as Directed.**

**(05)**

**A. Define the following. (Any five)**

1. Acid Rain
2. Soil quality
3. Soil Pollution
4. Drainage
5. Wind Erosion

6. Counter bunding

7. Water Pollution

**B. Answer the following. (Any Five)**

**(05)**

1. Define soil erosion?

2. Enlist factors causing soil erosion

3. How to formation of Acid soil

4. Define Acid soil?

5. Define soil health?

6. Name the amendments for acid soils?

7. Explain types of soil degradation ?

**Q.3 Write short notes. (Any five)**

**(10)**

1. land capability class

2. Submerged soil.

3. Acid soil

4. Soil Alkali

5. Soil Health.

6. Importance of organic manures/fertilizers

**Q.4 Attempt any Three/Long Questions/Example**

**(15)**

1. What are multipurpose trees? Enlist the role of multipurpose trees on salt affected soil?

2. Define water pollution? Enlist the sources and their management?

3. Define soil degradation? Explain types of soil degradation?

4. Define soil quality? Explain characteristics of healthy soil.