

**University of Ruhuna – Faculty of Technology**  
**Bachelor of Biosystems Technology Honours Degree**  
**Level 1 (Semester II) Examination**  
**Academic Year – 2020/2021**

**Course Unit: BST 1282 – Fundamentals in Agriculture (Theory)**

**Time allowed: One hour and 30 minutes**

**Index No: .....**

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**INSTRUCTIONS:**

**Number of pages: Four (4)**

Write your **index number** in the space provided.

**Part I – Answer all questions.**

Write answers in the space given below in each question.

Time allocation: 40 minutes.

**Part II - Answer two (02) questions only.**

Use separate book to provide answers.

Time allocation: 50 minutes

Mobile phones and programmed calculators are not permitted.

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**Part I**

1. Define Ion Exchange Capacity. (5 marks)

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2. What happens to CEC as pH increases? (5 marks)

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3. What is the ideal soil pH for crop growth? Explain your answer. (15 marks)

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4. Name two (02) functions of phosphorus associated with plant growth. (10 marks)

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5. List three (03) conditions that a mineral element must fulfil to be considered essential. (15 marks)

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6. Name five (5) soil-forming factors. (10 marks)

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7. What is indicated by the platy structure of soil? (5 marks)

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8. Assume that an agricultural land has a history of poor management (i.e. overstocking, over tillage, etc.), and subsequent soil degradation and erosion. How do you restore the land? how can this trend be reversed? Name four (04) ways to regain properly functioning soil and soil health. (20 marks)

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9. The soil of a field where no crop is grown has the Electrical Conductivity (EC) of 2.5 dS/m and pH of 9.2. What would be the problem/s associated with the soil? (10 marks)

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What physical characteristic might the soil structure has? (5 marks)

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What are your suggestions to overcome the problem? (10 marks)

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10. Name three (3) essential functions that a healthy soil performs. (15 marks)

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11. Mention three (3) preventive measures of soil borne diseases. (15 marks)

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12. State the difference between the 'Water Activity' and Water/Moisture Content' of a food. (20 marks)

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13. Classify fruits based on their structure and give an example for each. (15 marks)

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14. Mention two names of fibre crops and their uses. (10 marks)

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15. List three (3) major functions of secondary tillage. (15 marks)

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**Part II**

1.

- a. What is meant by agricultural marketing? (20 marks)
- b. Taking mango and finger millet (kurakkan) as examples compare characteristics of agricultural products that can affect their marketing. (40 marks)
- c. Giving suitable Sri Lankan examples, explain how government marketing interventions can impact on the agricultural sector. (40 marks)

2.

- a. Briefly explain the important environmental factors which can affect the growth of field crops. (50 marks)
- b. Explain the important management practices to ensure good quality vegetable seedlings (50 marks)

3.

- a. Explain commonly used chemical analyses in food industry. (50 marks)
- b. Discuss the benefits of food packaging. (50 marks)

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