

The Open University of Sri Lanka  
Faculty of Engineering Technology  
Department of Agricultural & Plantation Engineering



|                              |                                                        |
|------------------------------|--------------------------------------------------------|
| Study Programme              | : Bachelor of Industrial Studies Honours (Agriculture) |
| Name of the Examination      | : Final Examination                                    |
| <b>Course Code and Title</b> | : <b>AGX5376 Crop Processing</b>                       |
| Academic Year                | : 2024/25                                              |
| Date                         | : <del>5<sup>th</sup></del> March 2026                 |
| Time                         | : 13 30-16 30h                                         |
| Duration                     | : 3 hours                                              |

Index number .....

### General instructions

1. Read all instructions carefully before answering the questions.
2. Answers should be in clear handwriting.
3. Do not use red colour pen.
4. This question paper consists of two (02) sections.

### Section 1

- Consists of 15 questions in <sup>Seven</sup> (07) pages.
- Answer all questions.
- All questions carry equal marks.
- Write answers only in the space provided.
- Please do not remove the question paper from the examination hall.
- You may spend **one (01)** hour to answer this section.

### Section 11

- Contain **six (06)** questions in **one (01)** page.
- Answer any **four (04)** questions.
- You may spend **two (02)** hours to answer this section.
- All questions carry equal marks.
- Answer for each question should commence from a new page.

## SECTION 1

1. List **five (5)** different methods crop processing

- i. ....
- ii. ....
- iii. ....
- iv. ....
- v. ....

2. List **three (3)** systems of tea plucking.

- i. ....
- ii. ....
- iii. ....

3. Identify a key function that occur during each step given below in tea & rubber processing.

**Tea Fermentation:**

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**Tea Rolling:**

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**Standardization of rubber latex:**

.....

**Milling of rubber in rollers:**

.....

**Bleaching of rubber latex:**

.....

4. Write **five (05)** factors where the dry rubber content (DRC) of latex depends.

i. ....

ii. ....

iii. ....

iv. ....

v. ....

5. What is meant by "**skimmed rubber**"?

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6. What is the difference between producing black pepper and white pepper in terms of processing techniques.

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7. Give five (5) techniques should follow when storing spices like clove, cinomon, cardomom etc.

- i. ....
- ii. ....
- iii. ....
- iv. ....
- v. ....

8. What are the key steps involved in the wet (washed) coffee processing method?

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9. What is meant by "Cold-pressed oil"?

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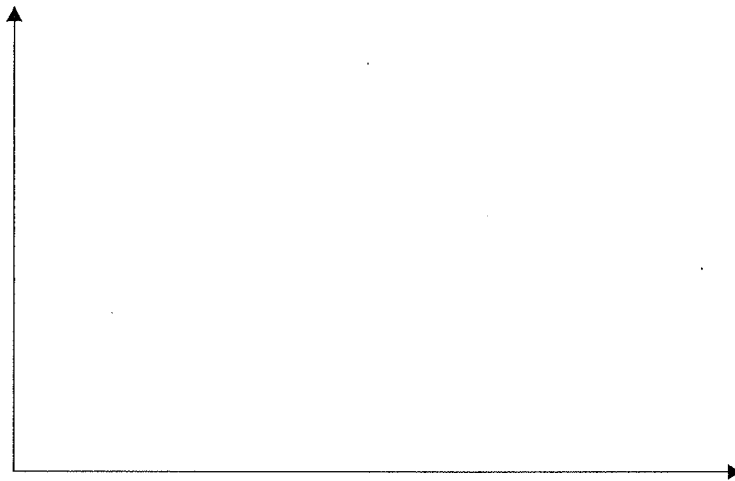
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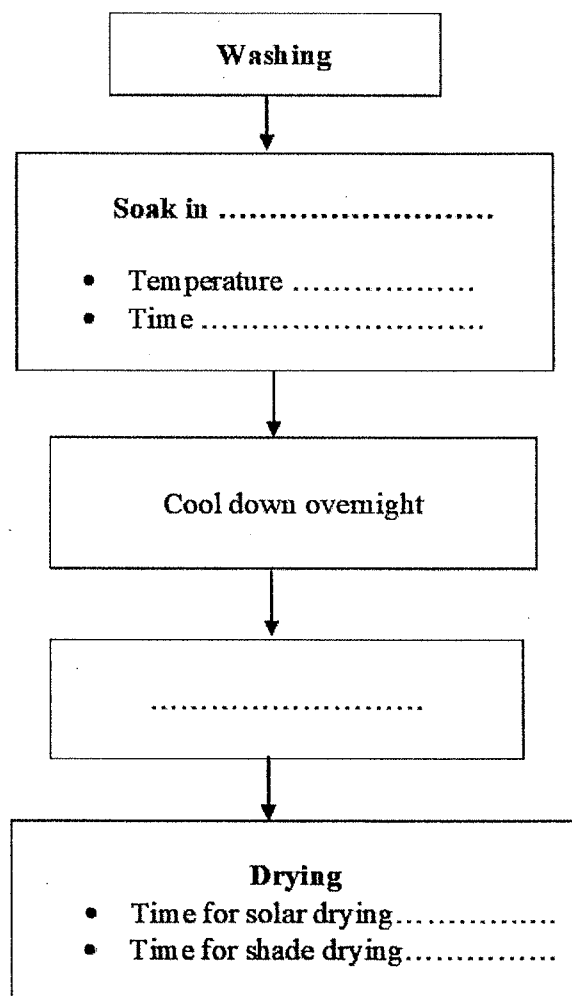
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10. Illustrate the graphical representations of adsorption and desorption isotherms, labelling the x-axis and y-axis



11. Fill the blanks of this flow chart relevant to the general procedure to paddy parboiling.



12. Why does parboiled rice have a higher nutritional value compared to raw rice?

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13. List **three (3)** chemical changes and **two (2)** physical changes happen during the parboiling process.

**Chemical changes:**

- i. ....
- ii. ....
- iii. ....

**Physical changes:**

- i. ....
- ii. ....

14. List **three (3)** advantages and **two (2)** disadvantages of rice parboiling?

**Advantages:**

- i. ....
- ii. ....
- iii. ....

**Disadvantages:**

- i. ....
- ii. ....

15. This question is based on a sample of air inside a chamber. Find the answers using the psychrometric chart provided.

Given a dry bulb temperature of  $25^{\circ}\text{C}$  and a relative humidity of 50%, determine the specific humidity (moisture content) and the enthalpy of the air.

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**SECTION 2: Answer any four (04) questions.**

1. a) Discuss how processing methods influence the chemical composition and quality of tea.  
**(15 marks)**  
b) Compare and contrast the processing steps of black tea, green tea, and oolong tea.  
**(10 marks)**
2. a) Briefly explain the latex preservation methods and their importance in rubber processing.  
**(5 marks)**  
b) Briefly describe the manufacturing process of Ribbed Smoked Sheets (RSS)  
**(20 marks)**
3. Discuss how value addition in spice crops can be used to attract consumers, using suitable examples  
**(25 marks)**
4. a) Compare wet and dry processing methods used in coffee production.  
**(10 marks)**  
b) Explain the paper manufacturing process from raw material preparation to finished paper powder. **(15 marks)**

5. a) Explain the difference between raw rice and parboiled rice in terms of processing and nutritional value.  
**(15 marks)**
- b) Two tons of paddy with 22% mc on wet basis is to be dried to 13 % mc on dry basis. Calculate the weight of the dry products and water evaporated.  
**(10 marks)**
6. Write short notes on following **three (3)** topics.
- i) Grading of tea
  - ii) Orthodox and CTC methods in tea processing
  - iii) Anticoagulant for rubber production
  - iv) Crape rubber production process
  - v) How to increase the paper productivity in Sri Lanka

