

UNIVERSITY OF RUHUNA – FACULTY OF AGRICULTURE

Third Examination in B.Sc in Green Technology (Part I) June, 2016

Organic Food Production and Preservation (FS3103) (Theory)

Answer **five (05)** questions including question no. 1

Time: 3 hrs

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1. a) "Organic foods are safer than the conventional foods". State whether you agree or disagree with this statement with giving facts. (25 marks)
- b) Briefly discuss the effects of food spoilage by giving suitable examples. (25 marks)
- c) Briefly describe the effectiveness of **organic food production** for the "**food security**" of a country? (25 marks)
- d) Explain how you would control the **self decomposition** of freshly harvested food (25 marks)
2. a) List five benefits of organic farming? (10 marks)
- b) Compare and contrast the healthy foods and junk foods. (20 marks)
- c) Briefly discuss the microbial activity on food spoilage. (25 marks)
- d) Write short notes on following (15 marks each)
- i. Effect of water activity (a_w) on food spoilage
 - ii. Enzymatic spoilage of foods
 - iii. Importance of controlling food spoilage
3. a) What are the two major ways of heat penetration in a food? (10 marks)
- b) Briefly explain the main factors affecting the rate of heat penetration in canning industry. (20 marks)
- c) Briefly explain the importance of the followings in heat processing of a food. (10 marks each)
- i) Cold point
 - ii) pH of food
 - iii) *Clostridium botulinum*
- d) Critically analyze the following statements. (20 marks each)
- i) Knowledge on heat resistance of an enzyme or microorganism is important in calculating the thermal conditions.

ii) Presence of fat or protein in a food will relatively increase the thermal death time of a microorganism.

4. a) Briefly explain how the processing affects on the sensory properties of a food. (25 marks)
- b) Briefly explain five precautions we may use to minimize the above mentioned effects. (25 marks)
- c) Briefly discuss the importance of raw material handling in food processing on the quality of the final product. (25 marks)
- d) A processor has successfully canned *po/os* cubes with using prior tested conditions. In the next batch, he tried to can *po/os* in brine under the same conditions, and observed that the final product is poor in quality. How would you explain the above observation, and advice the processor to improve the quality of the second batch? (25 marks)
5. Critically analyze the following statements. State whether you agree or disagree with the given statements. (25 marks each)
- a) Immediate cooling is essential during size reduction.
- b) Rather than the ordinary drying methods, freeze drying will give a better quality end product.
- c) Packaging is solely done with the aim of containment of a food material.
- d) Case hardening is a favorable phenomenon in drying of fruits.
6. a) Giving examples discuss the advantages of dehydration of food. (25 marks)
- b) Explain the general procedure of pickling, and indicate how each step contributes for preservation (25 marks)
- c) Briefly discuss the advantages of “**minimal processing**” with examples. (25 marks)
- d) Briefly explain the applications of Enzymes in food industry. (25 marks)