



**FACULTY OF CULINARY ARTS**

**FINAL EXAMINATION**

Student ID (in Figures) : 

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Student ID (in Words) : \_\_\_\_\_  
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Course Code & Name : **CUL2023.v2 Food Preservation & Toxicology**  
 Semester & Year : January - April 2023  
 Lecturer/Examiner : Wan Ruzanna Wan Ibrahim  
 Duration : 3 Hours

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 2 parts:  
     **PART A (70 marks) : SEVEN (7) short answer questions. Answers are to be written in the Answer Booklet provided.**  
     **PART B (30 marks) : Answer ONE (1) essay question. Write your answers in the Answer Booklet(s) provided.**
2. Candidates are not allowed to bring any unauthorized materials except writing equipment into the Examination Hall. Electronic dictionaries are strictly prohibited.
3. This question paper must be submitted along with all used and/or unused rough papers and/or graph paper (if any). Candidates are NOT allowed to take any examination materials out of the examination hall.
4. Only ballpoint pens are allowed to be used in answering the questions, with the exception of multiple choice questions, where 2B pencils are to be used.

**WARNING:** The University Examination Board (UEB) of BERJAYA University College regards cheating as a most serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students’ Handbook, up to and including expulsion from BERJAYA University College.

**Total Number of pages = 4 (Including the cover page)**

**PART A : SHORT ANSWER QUESTIONS (70 MARKS)**

**INSTRUCTION(S) :** Answer **SEVEN (7)** short answer questions. Write your answers in the Answer Booklet(s) provided.

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1. Distinguish between water activity (Aw) and water content. (10 marks)
2. Explain how you take pH measurement using the pH meter. (10 marks)
3. List down and explain **FIVE (5)** importance of food preservation. (10 marks)
4. Recommend a suitable food preservation technique to solve the problem encountered in each of the following food ingredients or food events:
  - a. dark brown color on the banana skin
  - b. fresh squeeze green apple juice turning into a brown color
  - c. over produce of tomato during summer
  - d. fresh milk that only able to last within 24 hours in room temperature
  - e. over stock on fresh fruits and vegetables due to economic restriction(10 marks)
5. Differentiate between rapid freezing (blast freezer) and slow freezing (normal freezer) methods. (10 marks)
6. Identify possible combination of hurdle used in order to preserve the following product;
  - a. Dry salted fish
  - b. Canned tomato sauce
  - c. Smoked salmon
  - d. 3 in 1 instant coffee mix
  - e. Sun-dried tomato in oil(10 marks)

7. The controversy regarding on food additive and preservative become prevalent in most developing country. Even with list of continuous numbers of food additive and preservative been approved by the Food, Drug & Administration (FDA) as safe to be consume, and numbers of research been done prior to the statement, it still not able console the community toward the usage of it in food processing.

Discuss **FIVE (5)** each positive and negative attributes of food additive and preservative toward food processing and human health.

(10 marks)

**END OF PART A**

**PART B : ESSAY QUESTIONS (30 MARKS)**

**INSTRUCTION(S)** : Answer **ALL** essay questions. Write your answers in the Answer Booklet(s) provided.

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1. Aminah prepared pickles cucumber in an airtight container. The vegetable were immersed in a solution containing vinegar and lactic acid. After a few days she noticed contamination had occurred where several spot of white scum appeared on the surface of pickle solution.
  - a. Describe pickling process in food preservation (5 marks)
  - b. Identify **FIVE (5)** problems that might occur during pickling process that lead to spoilage and microbial growth. (10 marks)
  - c. Suggest the mechanism of action for Aminah during preparation of pickles cucumber in inhibit microbial contamination. (5 marks)
  
2. In hurdle technology, foods are preserved by using combination of preservation methods in order to achieve a shelf life stable product against microorganisms' spoilage. Justify how acidification and dehydration prevents spoilage in microorganism. (10 marks)

**END OF EXAM PAPER**