



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
*University Village, Nnamdi Azikiwe Expressway, Plot 91, Cadastral Zone, Jabi, Abuja*  
**Faculty of Agricultural Sciences, Dept. of Agricultural Economics and Extension**  
*PoP Exam Question October/November, 2019*

**Course Code: ---- HCM 431**

**Course Title: --- Advanced Food and Beverage Production**

**Credit Unit: ----2**

**Total Score: ----70 Marks**

**Time Allowed: - 2 Hrs**

**Instruction: Answer compulsory question 1 (25 mks) and any three (3) questions (15 mks each)**

**Question One**

- What is food preservation? (5 mks)
- List and explain four (4) methods of food preservation (6 mks)
- Describe any four (4) growth pattern of bacteria in liquid with culture (6 mks)
- Mention any four (4) types of microbial spoilage in fruits and vegetables.(4 marks)
- What is Yoghurt(4 marks)

**Question Two**

- What do you understand by micro biology ( 4 Marks)
- Mention three (3) characteristics of microbes or micro-organisms (3 mks)
- In a tabular form list and discuss the positive and negative roles of micro-organisms (8 Marks)

**Question Three**

- Discuss the term food spoilage (3 mks)
- Explain the two main types of microscopes (8 marks)
- Identify any four (4) factors that can influence the growth of microorganisms (4 mks)

**Question Four**

- Briefly explain five (5) conditions responsible for effectiveness of anti-microbial agents (5 marks)
- List and briefly explain the four (4) phases of growth which bacteria cells in a culture vessel may undergo.(10 marks)

**Question Five**

- State 3 reasons for adding colour to food (6 marks)
- State four (4) importance of fermentation in food (6 marks)
- Mention any three (3) foods or food products preservatives are used in (3 mks)

**Question Six**

- What are food additives (4 mks)
- State the purpose of additives to food (3 mks)
- Mention only two (2) additives that could be introduced to food (2 mks)
- Describe four (4) ways of preventing food contamination (6 mks)