

OBAFEMI AWOLOWO UNIVERSITY, ILE – IFE, NIGERIA.
FACULTY OF SCIENCE
DEPARTMENT OF MICROBIOLOGY

B.Sc. (Microbiology) Degree Examination.

SEMESTER: Harmattan 2010/2011 Session

Date: 3rd August, 2011

COURSE CODE: MCB 309

Time allowed: 2½ hours

COURSE TITLE: Food Microbiology

INSTRUCTION: Answer all questions with each section in a separate booklet.

SECTION A

1a.

- i. How do microorganisms vary in food?
- ii. Of what use can carbohydrate metabolism profiles be put to?
- iii. Which type of protein is more susceptible to hydrolytic action?
- iv. Which of the classes of food nutrients is less preferred substrate for the microbial synthesis of energy and cellular materials?
- v. Mention one beneficial intestinal microorganism capable of metabolizing cholesterol in human.
- vi. Mention 3 examples of natural inhibitors in food.
- vii. How important is the information on the influence of pH on growth and viability of microbial cell?
- viii. Food stored in air always have a higher Eh(+MV) than when stored under vacuum in modified gas. Yes or No?
- ix. Mention two examples each of psychophilic, mesophilic and thermophilic organisms that can be found in food.
- x. What is the importance of removal of microorganisms from raw foods in relation to food preservation?
- xi. How can reduction of water availability in food be achieved?
- xii. Mention the type of irradiation used for sterilizing moist food.
- xiii. Mention the organism that produces a microbial product –based inhibitor in food.
- xiv. What is the optimum and temperature range for the growth of non proteolytic strains of *Clostridium botulinum* in food
- xv. Mention the most important control measure in preventing botulism.
- xvi. Glycogen is present inespecially.....while pentoses are naturally present in foods of.....
- xvii. Monosaccharide can be polymerize to produce.....such as
(i).....,(ii).....and (iii).....

2a. Differentiate the major groups of food borne diseases, giving specific examples.

b. Define Pasteurization and High Temperature Short Time process of food preservation.

c. Mention the principal serotype associated with enterohaemorrhagic colitis and the toxin produced. Describe the colitis symptoms.

d. Which of the strains of *Escherichia coli* is the major cause of diarrhoea in travellers as well as in infants? Mention the number of ingested cells required for the development of symptoms.

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SECTION B

- 1a. Describe the likely groups of microbes obtainable in any food sample stating the significance of each.
- b. Identify and briefly discuss five major reasons for carrying out microbiological evaluation of food.
- 2a. How does listeriosis differ from campylobacteriosis?
- b. Describe the zoonotic disease caused by Campylobacter jejuni giving important details.
- c. How will you determine the total viable count of a meat sample obtained from a local market in your area?



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SECTION C

- 1 a. List the various sources of microorganisms in food.
- b. As a Food Microbiologist, give suggestions on how to prevent or reduce microbial contamination of food.
- c. Discuss briefly the perishability of foods, mentioning the factors that determine it.
- d. Discuss briefly the chemistry of spoilage caused by microorganisms in food.
- e. Differentiate between syntrophic and synergistic associations found among microorganisms growing in foods, giving specific examples.

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