

Uva Wellassa University of Sri Lanka  
Faculty of Science and Technology  
Department of Science and Technology  
300 level 1<sup>st</sup> Semester Examination – June / July 2017  
SCT 327-2 Food Microbiology



Part B

1.

- a. What is the difference between intrinsic and extrinsic factors in food? Name one intrinsic factor and one extrinsic factor that you think are very important for controlling microbes in food. Why do you think that they are important? Explain.

(10 marks)

- b. One of your friends got sick after consuming a food containing ground beef which was on the kitchen table for 8 hours. After an analysis, you found that the food was contaminated with *Clostridium perfringens*. Further you have found that there were initially 20 cells of *C. perfringens* present in the food from a sample which was kept in the refrigerator.

$$\text{If } N_t = N_0 \times 2^n$$

$N_0$  : The number of bacteria present at an early stage in exponential growth

$N_t$  : The number of bacteria present after a period of exponential growth

$t$  : The time interval between  $N_0$  and  $N_t$

$n$  : Number of generations

Calculate the number of cells of *C. perfringens* present in the food at the time of consuming.

(generation time of *C. perfringens* is 40 minutes)

(10 marks)

2.

- a. Imagine that you are a microbiologist at a fancy food company. The marketing department has directed that all those nasty preservatives have to be removed from all products. How can you maintain the safety and quality of your products? Explain.

(10 marks)

- b. Molds are one of the major group of spoilage microorganisms. Do you agree? Explain.

(10 marks)

