The Open University of Sri Lanka
Faculty of Engineering Technology
Industrial Studies Programme of Study
Bachelor of Industrial Studies (Agriculture)

Final Examination- 2009/2010

AEI6236 Food processing

Date : 23/03/2010
Time : 14.00-17.00

SECTION II

(1) (a) Discuss the importance of sorting in controlling the effectiveness of food process.

(b) State the applicability of different peeling methods in pineapple jam production.

(2) (a) Discuss the effect of size reduction on fruits processing industry.
(b) What are the methods available for size reduction of fibrous foods in Sri Lanka?

(3) (a) What are the advantages and disadvantages of chilling as a preservation of food over other preservation methods?
(b) Briefly discuss the factors that control the shelf life of fresh crops in chill storage.

(4) (a) Write a short note on different types of freeze driers.
(b) Briefly discuss the importance of freeze drying and free concentration in wine production industry.

(5) (a) Discuss the different heat treatments used for the pasteurization

(b) Raw milk at 4^0C is to be pasteurized at 72^0 C in a plate heat exchanger at a rate of 2000 l/h and then cooled to 4.5 o C. The hot water is supplied at 4500 l/h at 85^0C and chilled water has a temperature of 2^0 C. Each heat exchanger plate has an available area of 0.5 m^2. The overall heat transfer coefficients are calculated as 2890 Wm^2K^{-1} in the heating section, 2750Wm^2K^{-1} in the cooling section and 2700 Wm^2K^{-1} in the regeneration section. 80% of the heat exchange is required to take place in the regeneration section.

Density of milk is 1030 kgm-1, Density of water is 958 kgm^{-1} at 85^0 C and 1000 kgm^{-1} at 2^0 C, the specific heat of water is constant at 4.2 $kjkg^{-1}K^{-1}$ and the specific heat of milk is constant at 3.9 $kjkg^{-1}K^{-1}$

Calculate the number of plates required in each section.

(6). Discuss the available methods that use to reduce the water activity of food to increase the shelf life of food in food processing industries