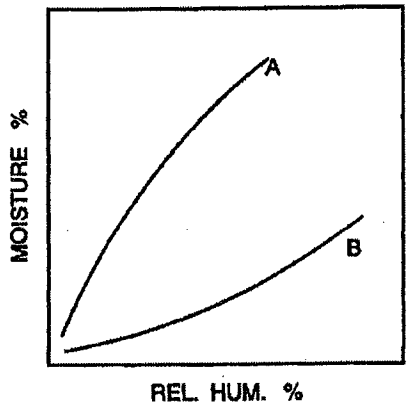
Uva Wellassa University, Sri Lanka
End Semester Examination – February 2011
SCT 317-1 Food Chemistry

Time: One (01) hour

UWU
UVA WELLASSA UNIVERSITY OF SRI LANKA
LIBRARY

Total **04** questions.
Answer all the questions.

01. i. Following graph indicates sorption isotherms of two food items. What can you state about them? (06 marks)



ii. Briefly describe what types (Classes) of lipids do you recommend for a patient suffering from atherosclerosis. Give reasons. (10 marks)

iii. An orange juice manufacturing company processes fruits for a long period. Explain why this practice could be inappropriate. (04 marks)

iv. Why doctors recommend Folic acid for pregnant women? (05 marks)

02. i. What are the functions of,
(a) Sucrose in jam
(b) Lactose in milk (06 marks)

ii. Why polyalcohol is an important agent in food industry? (04 marks)

iii. Jells are usually made by cooling a hot aqueous mixture of sugar, acid and pectin. Explain five (05) factors affecting firm jell formation? (15 marks)

03. Write short notes on any **three** of the following:
i. Conjugated proteins
ii. Tertiary structure of proteins
iii. Gelation of proteins in food products
iv. Protein-Protein Interactions in Bread dough/fibre formation (25 marks)

28

04. i. a. A small scale fruit Juice manufacturer introduced a new pineapple fruit juice to the local market. After few months from introduction, the demand for the product dropped. Therefore the manufacturer consulted a Food Chemist to find a solution for the problem. After analyzing a sample, the Food Chemist realized that the market failure could be due to the presence of high amount of precipitation inside the juice bottle. Using your food chemistry knowledge give a permanent solution to the above problem. (05 marks)

i.b. Briefly explain the production process of High Fructose Cone Syrup (HFCS). (04 marks)

ii. Two strains of *Bacterium sweetans*, A and B, use sucrose (table sugar) as a sole carbon source. The first step in the process of sucrose utilization is the passage of sucrose through a sucrose transporter protein in the membrane. The characteristics of the two transport proteins are as follows (assuming [E]tot is the same in both):

Strain	A	B
KM	1000 mM	10 mM
Vmax	1000 mmol/min	100 mmol/min

ii.a. Briefly explain which strain will grow faster if the concentration of glucose is: 10 mM? 100 mM? 1000 mM? (10 marks)

ii.b. One strain was isolated from the soil and the other from decaying fruit. Scientifically illustrate which strain was isolated from soil? (04 marks)

ii.c. Name three data bases that you can get information about kinetics of enzymes. (02 marks)