

Uva Wellassa University, Sri Lanka  
End Semester Examination – September 2011  
SCT 314-3 Cereal Science and Technology  
(repeat)  
Time: Three (03) hours



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Total 06 Questions  
Answer any four (04) questions

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1. A wheat noodles manufacturer purchased two wheat flour consignments from open market and used to manufacture wheat noodles. However, when the deliveries were being used to manufacture noodles, substantial amount of strings were dropped down and as a result of that his material productivity has declined from 92% to 90%.

The laboratory test results revealed that the gluten content of two consignments were 8.0% and 14%.

Explain the reason for occurring of substantial amount of droppings and remedial action to overcome this issue.

(25 marks)

2. A baker who has conducted a market survey with the view to make a loaf of bread for better consumer perception. The survey revealed that almost all bread in that area were not adequately leaven and volume, texture & bread crumb structure were not in consistence with the high quality bread. Explain how you are going to improve those quality characteristics while paying adequate attention on value addition process.

(25 marks)

3. A major problem encountered by a slice bread manufacturer was staling of his bread and as a result of that he was compelled to replace his product in the market every 3 days. As this staling process of bread was a huge income loss for him, he has decided to get advice from you. Explain the process of staling and possible remedial measures to delay it.

(25 marks)

4. A super market owner has decided to give better visibility to his bottle of sunflower and coconut oils by placing them in front of glass windows of the shop. Even though, when sunlight falls on the oils, which imparts glittering and shiny appearance to the oils, the acid value of the oils has been exceeded as against the value specified by the regulatory requirements, after 3 weeks.

Explain the supermarket owner what is being happening to the oil along with a meaningful solution to overcome this problem.

(25 marks)

5. Write short notes on followings.

- I. Shortening agents for bakery products
- II. Leavening index of bakery products
- III. Kneading process of bakery products
- IV. Oven spring of bakery products
- V. Bread improvers

(25 marks)

6. 500 kg of paddy with 20% moisture content was purchased by a small scale grain processor with the view to produce high quality rice for the off season. Since, the initial moisture content of the paddy is not desirable for long term storage; he has been advised to bring it down at least to 14%. To reduce moisture content in paddy grains, the grain processor has used a warm air current produce by sending the air through a heat exchanger. Suppose that the dry bulb temperature and relative humidity of incoming air and outgoing air (after passing through the wet grains) were 15°C & 20% and 30°C & 90% respectively. Calculate how long the drying process will takes place to dry the paddy from 20% moisture content to 14%. The air flow rate is 0.8 m<sup>3</sup>/s and the specific volume of incoming air is 0.82 m<sup>3</sup>/kg.

(25 marks)