



RAJARATA UNIVERSITY OF SRI LANKA

FACULTY OF APPLIED SCIENCES

B.Sc. (General/Special) Degree

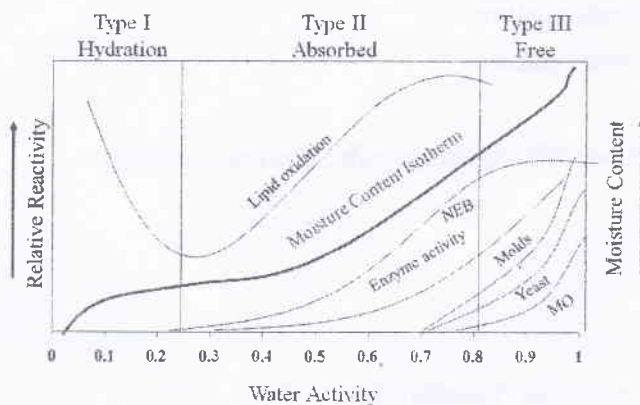
Third Year Semester II Examination– April / May 2016

CHE 3204 – FOOD CHEMISTRY

Answer any four questions

Time: 02 hours

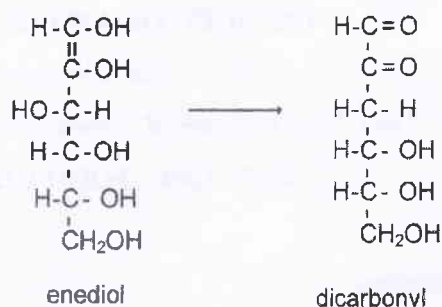
1. (a). List out the “forms of water” available in food and briefly explain each form. (07 marks)
- (b). Write a detailed account on “water activity” (10 marks)
- (c). Describe the effect of water activity on reaction rates in foods using following figure (08 marks)



2. (a). Discuss the importance of protein in human nutrition and health (10 marks)
- (b). Write a short note on
 - i). Denaturation of Proteins (05 marks)
 - ii). Complete and Incomplete Proteins (05 marks)
- (c). Briefly explain the methods to estimate daily protein intakes (05 marks)

3. (a). "Caramalization is the process of removal of water from a sugar followed by isomerization and polymerisation steps".

(i). Explain the above sentence and complete the following reaction.



(05 marks)

(ii). Write a brief note on applications of caramelization in food industry.

(07 marks)

(b). Write short notes on

(i). Dextrinisation

(04 marks)

(ii). Sugar replacers

(04 marks)

(c). List out naturally available color pigments in foods

(05 marks)

4. (a). Write a note on "Essential fatty acids"

(04 marks)

(b). Write the structures of EPA and DHA and explain the benefits of omega-3 fatty acids.

(07 marks)

(c). "Reuse of oil may cause adverse health effects." Giving examples comment on this.

(07 marks)

(d). Explain the initiation, propagation and termination process of Lipid Oxidation in Foods

(07 marks)

5. Food additives can be defined as "a substance or mixture of substance which is add to food and is involve in production , processing, packaging and storage with out been a major ingredients"
- (a). Write a short note on "Intentional additives" (06 marks)
 - (b). Describe the functions of Nitrate & Nitrate salts as food additives (07 marks)
 - (c). What are the features that antioxidants should have when use in food industry (06 marks)
 - (d). Write a short note on the use of ascorbic acid and ascorbate salt as antioxidants (06 marks)
6. (a). Describe "disperse phase" and "continuous phase" in colloidal systems. Give suitable examples. (05 marks)
- (b). Mayonnaise is an example of a stable emulsion of oil and vinegar, when egg yolk (lecithin) may be used as an emulsifying agent
- (i). Give three more examples of emulsions (03 marks)
 - (ii). Explain the structure and the functions of the emulsifying agent (07 marks)
- (c). Minor changes in chemical structure of food flavors may change the taste of compound.
- (i) Explain the above sentence using saccharin. (07 marks)
 - (ii). List out the three principal types of flavorings used in foods (03 marks)

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