B. Tech.

(SEM. VIII) EXAMINATION, 2006-07

BIOTECHNOLOGY OF OILS & FATS

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions. Each question carries equal marks.

1 Attempt any four questions:
   (a) What are enzymes? Name different enzymes used in processing of oils and fats. Also discuss their structural properties. 5
   (b) What do you understand by Immobilization of Enzymes? Give the mechanism of immobilization of enzymes. 5
   (c) Differentiate between Regiospecific and Non specific enzymes. 5
   (d) Give the merits and demerits of enzymatic oil processing over chemical oil processing. 5
   (e) Discuss the role of Enzymes in oils and fats processing industry. 5
   (f) Give the optimum conditions for an enzymatic reaction. Also give the different sources of enzymes. 5

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2 Attempt any **two** questions:

(a) Discuss the method of bio-deacidification of high free fatty acid oil. Also discuss the advantages of the process over the conventional alkali refining.

(b) Discuss in detail Enzymatic extraction of oil from oilseeds. Also discuss its advantages over the conventional processes.

(c) Explain the reaction conditions and kinetics of Enzymatic Hydrolysis of soybean oil.

3 Attempt any **two** of the following:

(a) Describe the enzymatic inter-esterification of oils in detail. Also mention the nutritional value of enzymatic inter-esterified fat.

(b) Define functional food. Also describe in detail the role of Bio-technology in production of structured lipids.

(c) Discuss Enzymatic Esterification of Myristic acid with iso-propanol to form ISO propyl Myristate.

4 Write short notes on any **two** of the following:

(a) Biosurfactant

(b) Enzymatic Degumming

(c) Enzymatic production of Diacyl glycerol.
5 Attempt any two of the following:

(a) Describe the biotechnological route for production of High Erucic Acid Rapeseed (HEAR) oil. Also discuss the industrial applications of HEAR. 10

(b) What do you understand by Genetic modification of oils? Also discuss the production of Canola oil. 10

(c) Discuss the use of Indian Exotic fats to formulate cocoa-butter equivalents through enzymatic route. 10

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