B. Tech.

(SEM. VI) EXAMINATION, 2006-07

SOLVENT EXTRACTION OF OIL SEEDS & OIL BEARING MATERIALS

_Time : 3 Hours_  
_Total Marks : 100_

_Note : _Attempt all questions. All questions carry equal marks._

**1** Attempt any four of the following :  _5x4=20_

(a) Discuss various conveyors used to transport oilseeds in an oil seed processing industry.

(b) Give a brief account of various preparatory steps required for oilseeds prior to solvent extraction.

(c) Discuss the significance of stabilization of rice bran. Also explain the method of stabilization of rice bran.

(d) Discuss the process for flaking and decortication of sunflower oil seed.

(e) Discuss pelletization process and its significance with respect to solvent extraction technique.

(f) Classify high and low oil content seeds. Also give a flow chart for the extraction of oil from oil seed.
2 Attempt any four of the following: 5x4=20
(a) What is the principle of solvent extraction? Also discuss various parameters that influence the extraction of oil by solvent.
(b) Explain percolation and immersion principles of solvent extraction along with their merits and demerits.
(c) What are the properties of an ideal solvent? Also discuss various solvents of industrial importance.
(d) Explain the working of a continuous percolation extractor with a neat flow diagram.
(e) Give a comparison of batch extraction process and continuous extraction process.

3 Write short notes with relevant diagram on any two of the following: 10x2=20
(a) Miscella Refining
(b) Desolventizer toaster and Drier cooler
(c) Flash desolventizing system.

4 Attempt any two of the following: 10x2=20
(a) What are supercritical fluids? Discuss the principle and application of Super Critical CO$_2$ for extraction of oils from oil seeds.
(b) What are alternative solvents available for extraction of oil from oilseed and explain how they differ from conventional solvents.
(c) Describe various steps to avoid solvent losses. Also elaborate various measures that should be taken for safety in solvent extraction plant.

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5 Attempt any two of the following : 10x2=20

(a) Describe solvent extraction process of mustard oil cake. Also discuss various parameters affecting the quality of oil.

(b) What is rendering? Also compare dry rendering with wet rendering.

(c) Discuss the significance of detoxification of oil meal. Also describe a suitable method for detoxifying castor cake.