

- (c) Explain the production of genetically engineered microbes. Discuss their significance in fermentation industry.

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EBT-601

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 154601

Roll No.

B. Tech. (VI Sem.)

SPL. THEORY EXAMINATION, 2014-15

FERMENTATION BIOTECHNOLOGY

Time : 3 Hours]

[Total Marks : 100

Note: Attempt all questions. All questions carry equal marks.

1. Attempt any two parts of this questions :
 - (a) What do you understand by fermentation? Discuss the major historical developments in fermentation industry.
 - (b) What do you understand about fermentation processes? Discuss various component parts of a fermentation process.

(c) What are microbial end products? Discuss the major primary & secondary metabolites in detail with their specific examples.

2. Attempt any two parts of the following:

(a) Discuss the production of citric acid using submerged fermentation process.

(b) Explain the pretreatment, quality and processing steps of barley to make it a preferred choice for beer production.

(c) Discuss various feedstock used for the production of alcohol. Explain the pretreatment or processing steps of feedstock common to all materials.

3. Attempt any two parts of the following:

(a) Discuss the concept of feedback regulation of a metabolic process with a suitable example.

(b) What is crabtree effect? Explain, under what conditions of sugar concentration, yeast cell tends to produce ethyl alcohol.

(c) What do you understand by carbon catabolite repression? Discuss its concept with suitable example.

4. Attempt any two parts of the following:

(a) What is mutant selection? How desired mutants are developed? Explain with an example.

(b) Discuss the procedure for isolation & preservation of an industrially important microbial strain to be used for production of a secondary metabolite.

(c) Discuss the overproduction of primary metabolites with suitable example.

5. Attempt any two parts of the following:

(a) What do you understand by strain improvement? Discuss the stability of genetically engineered microbes during a fermentation process.

(b) What is recombinant protein? How recombination systems are used for the improvement of industrial microorganisms?