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29/5/19

SE. Sem - IV (Biotech)

Fermentation Technology

QP Code : **NP-19776**

(2 Hours)

27

[Total Marks : 60

- N.B. : (1) Questions No. 1 is compulsory.
(2) Attempt any 3 questions out of the remaining 5 questions.
(3) Draw suitable diagrams.

1. Explain the following (any four) :- 20
- (a) Enrichment Technique
 - (b) Air sterilization methods
 - (c) Application of Baker's Yeast
 - (d) Biopesticides muADDA.com
 - (e) Carbon catabolite prepression.
 - (f) Relationship between doubling time and specific growth rate.
2. (a) Differentiate between the following :- 12
- (i) Batch and continuous fermentation.
 - (ii) Upstream and downstream processing.
 - (iii) Absolute and fibrous type of air filters.
- (b) Describe the process of oxygen transfer methodology from the air bubble to the cluster of cells in the fermentation broths. 8
3. (a) With a suitable diagram explain the various parts of a fermenter. 10
- (b) Explain production of acetic acid by trickling generator method. How this acetic acid differs from that obtained by Orleans method, 10
4. (a) How feedback inhibition resistant mutants obtained by gradient plate method? Discuss the merits of the method. 10
- (b) What are the different criteria considered for the medium to be used for an industrial fermentation process. 10
5. (a) Define inoculum development? Explain the important points to be considered in developing an inoculum. 5
- (b) Explain the production of ethanol on the basis of - 15
- (i) Microorganisms used
 - (ii) Type of raw materials
 - (iii) Recovery
6. (a) What are the general requirements of a fermentation process. Describe any three raw materials which can be used on an industrial scale to produce products. 10
- (b) Explain how beer is made through fermentation. 10
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