Seat No. : _____

XD-127

T.Y. B.Sc.
March-2013

Microbiology : Paper-X

Industrial Microbiology

Time : 3 Hours] **[Max. Marks : 70**

Instruction : All questions carry equal marks.

1. (A) Answer any **two** : **12**

   (i) Explain criteria for selection of raw materials in fermentation media.

   (ii) Describe the production of primary and secondary metabolites as a range of fermentation process.

   (iii) What is the role of inducers, precursors and antifoam agents in fermentation media ?

   (iv) Explain D value and its significance.

   (B) Answer in **one** or **two** lines only : **2**

   (i) Define protected fermentation.

   (ii) What is "DEL" factor ?

2. (A) Answer any **two** : **12**

   (i) Explain inoculum development for fungal processes.

   (ii) Explain importance of agitation and describe various types of impellers.

   (iii) What is KLa ? Give its significance.

   (iv) Basic functions of a fermenter.

   (B) Answer in **one** or **two** lines only : **2**

   (i) Name types of spargers.

   (ii) What is the use of baffles ?

3. (A) Answer any **two** : **12**

(i) Describe fermentation economics.

(ii) Explain mechanical methods for cell disruption.

(iii) Explain principle and method of bioassay of Antibiotics.

(iv) Describe liquid-liquid extraction process.

(B) Answer in **one** or **two** lines only : **2**

(i) List various chromatographic techniques.

(ii) Name two solvents used for precipitation.

4. (A) Answer any **two** : **12**

(i) Explain primary screening of antibiotic producers.

(ii) Describe the preservation of industrially important microorganisms.

(iii) Explain rDNA technology for strain improvement.

(iv) Describe the isolation of analogue resistant mutants by gradient plate method.

(B) Answer in **one** or **two** lines only : **2**

(i) Name any two culture collection centres.

(ii) Define secondary screening.

5. (A) Explain the fermentation of citric acid in detail. **12**

OR

(i) Explain fermentative production of Penicillin.

(ii) Explain Vitamin B_{12} fermentation.

(B) Answer in **one** or **two** lines only : **2**

(i) Name various strains used for amylase production.

(ii) Name various substrates used for SCP production.

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