B.N.BANDODKAR COLLEGE OF SCIENCE, THANE

SECOND TERM EXAMINATION, MARCH 2010 - 2011

S.Y. B.Sc.

MARKS: 60 **BIOTECHNOLOGY PAPER I** **TIME: 2 hrs**

N.B. 1. All the questions are compulsory.
2. Illustrate your answers with suitable examples.
3. All Questions carry equal marks.

Q1. A WRITE SHORT NOTES ON (any 3) **12**

1. Municipal waste water treatment processes
2. Lyophilization of culture for preservation
3. Strain improvement by alteration in regulation of metabolic pathway
4. Physical & chemical properties of soil
5. Give a short note on TMV

Q1. B. GIVE SIGNIFICANCE OF (any 3) **3**

1. BGA
2. Preservation of microbial cultures
3. Microbial enzymes

Q2. A. ANSWER THE FOLLOWING (any3) **12**

1. Explain structure of small pox.
2. Explain life cycle of lambda phage.
3. Explain cultivation of bacterial virus.
4. Give a note on disorders related to Human growth hormone.
5. Give a short note on production of erythropoietin.

Q2. B. ATTEMPT THE FOLLOWING (any 3) **3**

1. Write two disorders related to insulin
2. Define secondary culture.
3. Define plaque.
4. Name the criteria used for virus classification?
5. Define protomers.

Q3. A. ANSWER THE FOLLOWING (any 3) **9**

1. Diagrammatically explain carbon cycle.
2. Distinguish between nitrification & denitrification.
3. Diagrammatically explain evapotranspiration method.
4. Diagrammatically explain imhoff tank.
5. Write a note on significance of soil flora.

Q3.B. EXPLAIN THE TERMS (any 3) **3**

1. Sedimentation
2. Rhizosphere
3. B.O.D
4. Oxidation ponds
5. Zymogenous population

Q3.C.MATCH THE FOLLOWING **3**

A	B	C
Gallionella	Sulphur oxidiser	B.O.D
Trickling filters	Soil organism	H_2SO_4
Thiobacillus	Zooglea	Iron transformation

Q 4. A. ANSWER THE FOLLOWING (any 3) **12**

1. Distinguish between batch and continuous fermentation.
2. Compare and contrast between surface and submerged fermentation.
3. Explain selection of mutant strain with an example.
4. Explain primary screening with an example.
5. Explain giant colony technique for secondary screening.

Q 4. B. EXPLAIN THE FOLLOWING TERMS. (any 3) **3**

1. Recombination
2. Feed back inhibition
3. Feed back repression
4. Continuous fermentation
5. Submerged fermentation

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Q1. A WRITE SHORT NOTES ON (any 3) **12**

1. Methods for enumeration of soil flora
2. Cryo-preservation of cultures
3. Activated sludge process
4. Life cycle of T4 phage.
5. Procedure for production of insulin

Q1. B. GIVE SIGNIFICANCE OF **3**

1. COD
2. Strain improvement
3. Capsid

Q2. A. ATTEMPT (any3) **12**

1. Write short note on structure of TMV.
2. Explain the structure of Influenza virus.
3. Write a short note on classification of virus.
4. Give a short note on cultivation of animal viruses.
5. Give a short note on Somatostratin.

Q2. B. ATTEMPT (any3) **3**

1. Define Primary culture
2. Any two applications of microbial enzymes
3. Write medical application of Human growth hormone.

Q3. A. ANSWER THE FOLLOWING (any 3) **9**

1. Diagrammatically explain nitrogen cycle.
2. Soil microflora plays an important role in soil fertility – Justify.
3. Diagrammatically explain sulphur cycle.
4. Diagrammatically explain septic tank.
5. Diagrammatically explain trickling filters.

Q3.B. EXPLAIN THE TERMS (any 3) **3**

1. Nitrification
2. Actinomycetes
3. Screening
4. Communitor
5. Autonomous population

Q3.C. GIVE TWO EXAMPLES OF **3**

1. Phosphate solubilizers
2. Iron Transformers
3. Sulphur oxidisers

Q4.A . ANSWER THE FOLLOWING (any 3) **12**

1. Distinguish between aerobic and anaerobic fermentation.
2. Explain submerged fermentation.
3. Explain selection of mutant strain with an example.
4. Explain crowded plate technique for primary screening.

Q 4. B. EXPLAIN THE FOLLOWING TERMS. (any 3) **3**

1. Mutation
2. Solid state fermentation
3. Feed back inhibition
4. Batch fermentation
5. Secondary screening