

B. N. Bandodkar College of Science, Thane
S. Y. B. Sc. (Sem IV) Examination – 2013-14

USBT-401

Duration 2 hrs

Total Marks-60

- N. B.** 1) All questions are compulsory.
2) Figures to right indicate full marks.
3) Draw neat and labeled diagrams wherever necessary

Q.1 A. Answer the following (Any two).

- 1) Write a note on history of vaccination. 12
- 2) What are hormones? Explain the synthesis of Insulin.
- 3) What is a bacteriophage? Explain the structure of T4 bacteriophage.
- 4) What are temperate phages? Write a note on life cycle of λ (lambda) phage.

Q.1 B Answer the following (Any three).

- 1) Give an example of attenuated vaccine 3
- 2) Give one example of dsDNA virus
- 3) Which parts of the body have Somatostatin present in them?
- 4) What is the use of Methotrexate?
- 5) What is a nucleocapsid?
- 6) Give examples of toxoids

Q.2 A. Answer the following (Any two).

- 1) Write a note on sulfur cycle 12
- 2) Explain the phenomenon of soil horizonation.
- 3) Schematically explain the generalized steps followed in waste water treatment.
- 4) Diagrammatically explain the steps involved in establishment of 'infection thread' during symbiotic nitrogen fixation.

Q.2 B Answer the following (Any three).

- 1) Give importance of aerated lagoons. 3
- 2) Define: sewerage.
- 3) What do you mean by gleization of soil?
- 4) Define: denitrification
- 5) Give an example of a symbiotic nitrogen fixing bacteria.
- 6) What is an average size of a sand particle?

P.T.O.

Q.3 A Answer the following (Any two).

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- 1) Discuss replica plate technique used in selection of mutants?
- 2) Distinguish between submerged fermentation and surface fermentation.
- 3) State the importance of preservation of microorganisms and elaborate on any one method used for preservation of the same.
- 4) How would you carry out primary screening for selecting an antibiotic producing organism from soil?

Q.3 B Answer the following (Any three).

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- 1) Give an example of Cryoprotective agents.
- 2) Define: racemase
- 3) Give an example of antifoaming agent
- 4) Give example of anaerobic fermentation.
- 5) Define : auxotroph
- 6) Define: Growth factor.

Q. 4 A Answer the following.

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- 1) Explain the route of administration of vaccine.
OR
- 1) Write a note on uses of microbial enzymes in medical field?
- 2) Write a note on rhizosphere.
OR
- 2) Write a note on activated sludge digestion process
- 3) Discuss methods of strain development.
OR
- 3) Write a note on gradient plate technique

Q. 4 B Answer the following

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- 1) Give significance of human growth hormone?
OR
- 1) What are plaques?
- 2) Give significance of Imhoff tank
OR
- 2) What is Nitrification?
- 3) Why is calcium carbonate incorporated in the medium used for screening an organic acid producing organism
OR
- 3) State the role of baffles in a fermenter.
