

B. N. BANDODKAR COLLEGE OF SCIENCE, THANE
IV SEMESTER END EXAMINATION- MARCH - 2015
S.Y.B.Sc.
USBT 401

Duration: 2 hrs 30 min

Total Marks: 75

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 four)

- 1) What is the significance of methotrexate.
- 2) What is endolysin? Give its significance.
- 3) Give one example of toxoid vaccine and heat killed vaccine.
- 4) Give two examples of viruses with dsDNA genome.
- 5) Give significance of Somatostatin.
- 6) What is a protoplast? Give one application of protoplast.
- 7) What are the different symmetries found in viral structure?
- 8) What is streptokinase? Give its significance.

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

- 1) Explain the cultivation of animal viruses.
- 2) Give the significance of human growth hormone. Add a note on the synthesis of HGH by rDNA technology.
- 3) With the help of diagram explain the structure of T4 phage.
- 4) Write a note on BCG vaccine.

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

- 1) Explain the term: BOD
- 2) Explain the term: microfiltration.
- 3) Explain the term: Ammonification
- 4) What is the significance of CaCO_3 and CaSO_4 in Winogradsky column set up?
- 5) Explain the term: mutualism.
- 6) State the significance of leghemoglobin.
- 7) Explain the term: proteolysis.
- 8) What are indicator microorganisms?

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P.T.O.

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

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- 1) Write a note on the carbon cycle.
- 2) Discuss primary treatment of waste water.
- 3) Write a note on the activated sludge method of treatment.
- 4) What is the composition of different types of wastewater? What is the effect of it on the environment?

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

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- 1) What is concerted feedback control?
- 2) Define an analogue and give two examples of it.
- 3) What is the long form of CMI & ATCC?
- 4) Give two examples of anaerobic thermophiles.
- 5) What are isoenzymes?
- 6) What are the uses of itaconic acid?
- 7) Define feedback repression.
- 8) Diagrammatically explain mitotic crossing over.

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

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- 1) Write a short note on disadvantages of anaerobic fermentations.
- 2) Explain in brief the types of feedback inhibitions.
- 3) Justify – ‘Modification of Permeability can help to obtain glutamate from *C. glutamicum*.’
- 4) Write a short note on ‘Strain improvement by recombination.’

Q.4 A Answer the following

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- 1) Explain one step growth pattern of bacteriophage.
OR
- 1) Write a note on the advantages and disadvantages of intramuscular, intradermal and oral mode of vaccine administration.
- 2) Write a note on the nitrification and denitrification.
OR
- 2) Write a note on the physical, chemical and biological characteristics of water.
- 3) Justify – ‘Anaerobic fermentations have various advantages.’
OR
- 3) What are the different methods of preservation of industrially important strains?