B.N.BANDODKAR COLLEGE OF SCIENCE, THANE

SECOND TERM EXAMINATION, MARCH 2010 - 2011

F.Y. B.Sc.

MARKS: 60 **TIME: 2 hrs**

MICROBIOLOGY PAPER I

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

Q. 1.A. ANSWER THE FOLLOWING (any 3) **12**

1. Give economical importance of fungi.
2. Explain mode of nutrition and reproduction in algae.
3. Write a note on growth curve of *E .coli.*
4. Explain general characteristics of Actinomycetes.
5. Write a short note on classification of viruses.

Q.1.B. GIVE TWO EXAMPLES OF (any 3) **3**

1. Ascomycetes
2. Halophilic microorganism
3. Micro organisms known for quorum sensing
4. Vectors for rickettsia.
5. Chlamydia.

Q.2.A. ANSWER THE FOLLOWING (any 3) **12**

1. Diagrammatically explain biofilms formation.
2. Explain in brief the metabolic and structural adaptations for temperature variations by micro organisms.
3. Explain in brief enumeration of bacteria in context with cell mass.
4. Give a brief account of continuous culture

Q. 2. B. GIVE ONE WORD FOR (any 3) **3**

1. Microorganisms are cultivated in closed culture vessel with a single batch of medium
2. Time taken by the population of micro organisms to double in number.
3. Microorganisms that grow in extreme conditions
4. Solutes which are compatible with metabolism and accumulate with high intracellular concentrations.

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

1. Diagrammatically explain life cycle of *S. cerevisiae*.
2. Discuss the morphology and mode of nutrition in *Paramaecium*.
3. Distinguish between Fungi and Algae.
4. Explain in detail various types of spores produced by fungi.

Q. 3. B. DEFINE THE FOLLOWING (any 3) **3**

1. Mycellium
2. Mycotoxicology
3. Blastospores
4. Zygote
5. Cilia
6. Ergotism

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

1. Write a short note on general characteristics and diseases of rickettsia.
2. Explain lytic cycle of virus.
3. Give characteristics of Chlamydia.
4. Give short note on methanogenic bacteria.

Q. 4. B. ANSWER THE FOLLOWING (any 3) **3**

1. Define Inclusion bodies.
2. Define prophage.
3. Give examples of thermophile organisms.
4. State two species of Rickettsia .
5. Chemolithotrophs.

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Q. 1.A. ANSWER THE FOLLOWING (any 3) **12**

1. Give economical importance of Algae.
2. Explain the life cycle of *Chlamydomonas*.
3. Defined balanced growth and unbalanced growth. Explain the phenomenon of shift up and shift down of bacterial cultures when transferred from one medium to another.
4. Discuss: Structure of T4 phage.
5. Give short note on inclusion bodies and their significance.

Q.1.B. GIVE TWO EXAMPLES OF (any 3) **3**

1. Green algae
2. Mesophiles
3. Types of electromagnetic radiation
4. Characters of chlamydia.
5. Organisms belonging to pro-actinomycetes

Q.2.A. ANSWER THE FOLLOWING (any 3) **12**

1. Explain in details the petroff- hausser counting chamber.
2. Give brief account of chemostat.
3. Give in details the adaptations by halophilic micro organisms to tolerate extreme environments.
4. What is quorum sensing? Discuss its importance to micro organisms.

Q. 2. B. GIVE ONE WORD FOR (any 3) **3**

1. Organisms that can tolerate 1000 atm pressure
2. Radiation that bring about formation of Thymine dimmers
3. 1/100 the relative humidity of the solution
4. A continuous culture system that has a photocell that measures the absorbance of the culture in the growth vessel.

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

1. Diagrammatically explain life cycle of *R. stolonifer.*
2. Enlist various advantages of Fungi.
3. Distinguish between Fungi and Protozoa.
4. Discuss various diseases caused by Algae and Protozoa.

Q. 3. B. DEFINE THE FOLLOWING (any 3) **3**

1. Phycologist
2. Progametangia
3. Conidiospores
4. Zygote
5. Diatoms
6. Zoospores

Q4. A. ATTEMPT (any 3) **12**

1. Give short note on extreme halophiles.
2. Give short note on general characteristics and vectors of rickettsia.
3. Give short note on cell wall of actinomycetes.
4. Diagrammatically explain lysogenic cycle.

Q4. B. ATTEMPT (any 3) **3**

1. State two diseases related to rickettsia.
2. Define chemoorganotrophs.
3. Define obligate autotrophs.
4. Give examples of enzymes associated with methanogenic bacteria