B.N. Bandodkar College of Science, Thane

II[nd] Semester End Examination March 2015

USBC 202

Duration: 2 hrs 30min. MaxMarks-75

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

Q.1) A)Answer the following (Each question carries 4 marks) 20

a) Explain the importance of cyclins in detail.

OR

a) Explain the structure and function of nucleolus.

b) Regulation of cell cycle is essential. Explain.

OR

b) Explain the architecture of control system of cell cycle.

c) Schematically explain the phases of mitosis.

OR

c) Explain the structure and function of nuclear envelope.

d) Write in brief about the checkpoints of cell cycle.

OR

d) Distinguish between mitosis and meiosis.

e) Explain the phases of prophase I of Meiosis in detail.

OR

e) Explain the phases of meiosis-II in detail.

Q.2) B) Answer the following (Each question carries 4 marks) 20

a) Explain the absorption of monosaccharide.

OR

a) Explain the digestion of carbohydrates.

b) Explain the digestion of proteins by pancreatic proteases.

OR

b) Explain the emulsification of lipids in small intestine.

c) Explain the mechanism of absorption of lipids.

OR

c) Explain the digestion of lipids.

d) Explain the term GFR and write a note on the pressures involved in maintaining the GFR.

OR

d) Write a short note on the structure of nephron.

e) Explain the mechanism of tubular reabsorption during urine formation.

OR

e) Explain the process of tubular secretion during urine formation.

Q.3) **Answer the following: (Each question carries 4 marks)** 20

a) Explain how bacteria are characterized based on size, shape and structure.

OR

a) Give a historical background of contribution of microbiologist.

b) Explain the staining reaction.

OR

b) Explain the classification of bacteria based on shape and flagella.

c) How can the bacteria be identified microscopically?

OR

c) Explain the Viable method to count microbial cells.

d) Explain Coulter counter to count microbial cells.

OR

d) Explain growth yield and efficiency.

e) Explain growth curve.

OR

e) Explain measurement of growth and synchronous growth.

Q.4) A) **Answer the following.(Each question carries 3 marks)** 15

a) Give the significance of meiosis.

OR

a) Give the significance of mitosis.

b) Explain the release and activation of zymogens in proteins.

OR

b) Draw a neat and labeled structure of Bowman's capsule.

c) Explain gram staining.

OR

c) What is acid fast stain?

Q.4) B) **Answer the following. (Each question carries 2 marks)**

a) Name the phases of cell cycle.

OR

a) What are tubulins?

b) What is emulsification?

OR

b) What is renal threshold?

c) Enlist any two differential stains.

OR

c) Name any two rod shaped bacteria.