

B.N. BANDODKAR COLLEGE OF SCIENCE, THANE

II Semester Examination- 2014

F.Y.B.Sc. [USBC 202]

Duration 2 hrs

Marks 60

N. B. :

1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Use of log table/ non programmable calculator is allowed.

- Q.1 a Describe the structure of nuclear envelope with diagram. 4
OR
a What is the significance of meiosis? 4
b Write a note on prophase and anaphase in mitosis. 4
OR
b Give an account of Proleptotene and Leptotene. 4
c Explain G1 phase. 4
OR
c Write a note on occurrence, position and morphology of the nucleus. 4
d What are the functions of nucleus? 3
OR
d Explain nucleolus. 3
- Q.2 a Explain the mechanism of absorption of glucose. 4
OR
a Explain the digestion of protein by gastric secretion. 4
b Discuss the process of emulsification. 4
OR
b Explain Absorption of amino acids and fatty acids in the intestine. 4
c Explain tubular reabsorption of water and sodium in PCT. 4
OR
c Draw neat labeled diagram of overview of digestion of carbohydrates and proteins. 4
d Write a note on digestion. 3
OR
d Explain net filtration pressure. 3
- Q.3 a Discuss contributions of Louis Pasteur. 4
OR
a State the Koch's postulates. 4
b Gram staining is differential staining method – Explain. 4
OR
b Write a note on Major Nutritional Types of Microorganisms. 4

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|------|---|---|---|
| | c | Explain microbial growth curve with help of diagram. | 4 |
| | | OR | |
| | c | What is generation time? State the mathematical expression of growth. | 4 |
| | d | Write a note on biogenesis. | 3 |
| | | OR | |
| | d | Explain fixation. | 3 |
| Q. 4 | A | Answer the followings - | |
| | a | Give an account of different stages of meiosis with diagrams. | 3 |
| | | OR | |
| | a | With the help of neat labeled diagram, distinguish between Prophase I and Prophase II | 3 |
| | b | Synapsis is characteristic of which phase in meiosis. | 2 |
| | | OR | |
| | b | Enlist the different phases of cell cycle. | 2 |
| | B | Answer the followings - | |
| | a | Explain the role of secretin and gastrin in digestion. | 3 |
| | | OR | |
| | a | Explain the functions of PCT and DCT. | 3 |
| | b | Write the reaction for enzymatic cleavage of cholesterol esters. | 2 |
| | | OR | |
| | b | Which are the solutes which are filtered after glomerular filtration? | 2 |
| | C | Answer the followings - | |
| | a | How is Petroff-Hausser Counting Chamber used for microbial growth measurement? | 3 |
| | | OR | |
| | a | Explain plating methods for cell count. Why is plate count results often expressed as colony forming units? | 3 |
| | b | What is Tyndallization? | 2 |
| | | OR | |
| | b | Define- microbes. | 2 |