B. N. BANDODKAR COLLEGE OF SCIENCE, THANE
II SEMESTER END EXAMINATION- MARCH - 2015
F.Y.B.Sc.
USBT 202

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) **8**

1) Draw structures of two acidic amino acids.
2) Draw structures of amino acids containing sulphur in their structure.
3) Give two examples of disaccharides and state their monomers.
4) What is the significance of SDS in PAGE?
5) Give the reaction of ethyl alcohol with amino acids.
6) Justify why reaction of proline with ninhydrin yields a yellow colour.
7) Explain the term: isoelectric pH.
8) Give the physical properties of amino acids.

Q. 1 B Answer the following. (Any two) **12**

1) Write a note on the different qualitative and quantitative methods used for the detection of proteins.
2) Explain the structure of hemoglobin.
3) Write a note on the Edman's degradation method.
4) Explain the physical and chemical properties of carbohydrates.

Q.2 A Answer the following. (Any four) **8**

1) What is phenocopy?
2) Justify: Mendel's law of segregation is also called as law of purity of gametes.
3) Give two examples of co-dominance.
4) What is the significance of G-banding?
5) What is supercoiling? Name the enzyme that controls supercoiling.
6) Explain: maternal effect.
7) If a woman of blood group A marries a man of blood group B, what can be the blood group of their child?
8) Explain the terms: penetrance and expressivity.

P.T.O.

Q.2 B	**Answer the following. (Any two)**	12
1)	Discuss the effect of sex on gene expression.	
2)	Give an account of recessive epistasis.	
3)	Write a note on non-Mendelian inheritance in *Neurospora*.	
4)	Discuss the inheritance of neutral and suppressive yeast petite mutants.	
Q.3 A	**Answer the following. (Any four)**	8
1)	State the importance of *E.coli* in food.	
2)	State two features of *Leuconostoc* species in context in food technology.	
3)	How does centrifugation help in removal of microorganisms?	
4)	Explain how washing helps in removal of organisms.	
5)	Explain the term: Metabiotic effect.	
6)	What is the effect of changes in the colloidal constituents of food on growth of microorganisms?	
7)	Explain the term: phase of negative acceleration.	
8)	How does one achieve and maintain anaerobic conditions in a sealed or packed food?	
Q.3 B	**Answer the following. (Any two)**	12
1)	How does the physical state and structure of food affect the growth of microorganisms?	
2)	Discuss the influence of non nitrogenous organic compound on the growth of microorganism.	
3)	Write a note on 'canning : as a method of preservation'.	
4)	Write a note on the scope of food technology.	
Q. 4 A	**Answer the following**	15
1)	Write a note on the classification of protein.	
	OR	
1)	Write a note on the methods used for the separation of amino acids.	
2)	Write a note on the role of histone and non-histone proteins.	
	OR	
2)	Justify: *E.coli* is used as a model organism in genetics.	
3)	Explain the effect of pH on growth of different organisms in food.	
	OR	
3)	Explain the effect of inhibitory substances and temperature on the growth of microorganisms.	

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