**B. N. BANDODKAR COLLEGE OF SCIENCE, THANE**

~~II SEMESTER END~~ **EXAMINATION- ~~MARCH~~ - 2015**

ADDITIONAL/ATKT. **F.Y.B.Sc.** JUNE

**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) Explain the reaction of α-D glucose with methyl alcohol.
2) What is zwitter ion?
3) What is PTH? Where is it observed?
4) What are enzymes?
5) Draw structures of two basic amino acids.
6) Draw structures of two aromatic amino acids.
7) Give two examples of disaccharides and state their monomers.
8) State two physical properties of monosaccharides.

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

1) Write a note on separation of proteins using PAGE.
2) Write a note on the Sanger's method.
3) Explain the structure of hemoglobin.
4) Explain different methods used in the detection of proteins

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

1) Define: i) Phenocopy ii) Phenocopying agent.
2) State the role of non-histone proteins.
3) If a woman having blood group AB marries a man of blood group AB, what is the probability that their child would have blood group O?
4) State Mendel's $2^{nd}$ and $3^{rd}$ laws of inheritance.
5) Define: penetrance. What is complete and incomplete penetrance?
6) Name any two methods used for chromosome banding.
7) State two differences between partial dominance and co-dominance.
8) What are [poky] mutants?

P.T.O.

**Q.2 B** **Answer the following. (Any two)** **12**

1) Discuss the inheritance of direction of shell coiling in *Limnae peregra.*

2) Explain the phenomenon of dominant epistasis observed in fruit colour of summer squash.

3) Give an account of non-Mendelian inheritance in yeast petite mutants.

4) Discuss: Sex-influenced inheritance of pattern baldness in humans.

**Q.3 A** **Answer the following. (Any four)** **8**

1) What is the importance of *Lactobacillus* species in food industry?

2) State the peculiar feature of *S. cerevisiae* and *S. baili* var *osmophilus* with respect to food industry.

3) State any two methods to prevent the microbial decomposition.

4) Explain the term: phase of positive acceleration.

5) Explain the term: Appertization

6) Enlist two causes which lead to the spoilage of food.

7) State the role of enzymes pectinesterase and polygalacturonases.

8) Explain the term: Metabiotic effect.

**Q.3 B** **Answer the following. (Any two)** **12**

1) Explain canning as a method of preservation.

2) Explain how asepsis and maintenance of microbial cultures help in preservation.

3) Write a note on primary sources of microorganisms.

4) Justify: The physical state and structure of food affect the growth of microorganisms.

**Q. 4 A** **Answer the following** **15**

1) What are the different methods used for the separation of amino acids.

**OR**

1) Explain the structure of myoglobin.

2) Describe the organization of DNA into chromosomes in prokaryotes.

**OR**

2) Why is *Drosophila* used as a model genetic organism?

3) Write a note on the scope of food technology.

**OR**

3) Explain the effect of pH on growth of different organisms in food.

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