

**B. N. BANDODKAR COLLEGE OF SCIENCE, THANE**  
**ADDITIONAL EXAMINATION: II SEMESTER - ~~MARCH~~ - 2015**  
**ATKT F.Y.B.Sc. (old syllabus) 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) Give the significance of G<sub>0</sub> phase.
- 2) State the significance of G<sub>1</sub> and G<sub>2</sub> phase.
- 3) Which is the longest phase of meiosis I?
- 4) State the significance of pachytene stage.
- 5) Explain the term termination in context with meiosis I
- 6) State the role of START in cell cycle?
- 7) Explain the role of maturation promoting factor.
- 8) Give the significance of meiosis.

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

**12**

- 1) Write a note on the biological significance of DNA
- 2) Explain the process of mitosis with the help of diagram.
- 3) Describe the ultrastructure of chloroplast.
- 4) Describe the ultrastructure of mitochondria.

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

**8**

- 1) Give two examples of saturated fatty acids.
- 2) Give two examples of unsaturated fatty acids.
- 3) What are sphingomyelins?
- 4) Define: enzyme.
- 5) Give two examples of globular proteins.
- 6) State the functions of myoglobin.
- 7) What is the function of hemoglobin?
- 8) Draw the structure of triacylglycerol.

**P.T.O.**

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

12

- 1) Enlist the functions of phospholipids.
- 2) Describe the classification of amino acids based on the structure.
- 3) Explain the primary structure of proteins.
- 4) Explain the properties of triacylglycerols.

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

8

- 1) What is herd immunity?
- 2) Name the three events of inflammatory response.
- 3) What is pus?
- 4) State any two characteristic features of acquired immunity.
- 5) Draw the structure of IgA.
- 6) What is humoral immunity?
- 7) Give one example of : i) artificially acquired active immunity  
ii) naturally acquired active immunity.
- 8) Name two immunoglobulins that are present on the surface of B cells.

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

12

- 1) With the help of a neat, labeled diagram describe the structure of an antibody.
- 2) Write a note on phagocytosis.
- 3) Give an account of the physiological barrier of innate immunity.
- 4) Write a note on B and T lymphocytes.

**Q.4 A Answer the following**

15

- 1) Diagrammatically explain the structure of nucleosome.  
**OR**
- 1) What are cell cycle checkpoints? Give their significance.
- 2) Write a note on structure and functions of cholesterol.  
**OR**
- 2) Discuss the physical properties of amino acids.
- 3) Give an account of the biological functions of IgG and IgM  
**OR**
- 3) Describe the role of skin in immunity.

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