

**B.N.BANDODKAR COLLEGE OF SCIENCE, THANE**  
**SECOND TERM EXAMINATION, MARCH 2010 - 2011**

**F.Y. B.Sc.**

**MARKS: 60**

**BIOTECHNOLOGY PAPER I**

**TIME: 2 hrs**

---

- N.B.** 1. All the questions are compulsory.  
2. Illustrate your answers with suitable examples.  
3. All Questions carry equal marks.

**Q1. A WRITE SHORT NOTES ON (any 3) 12**

1. Methods of enumeration of micro organisms.
2. Gram staining
3. Discuss Landsteiner's experiment of blood grouping.
4. Explain process of DNA transfer using bacteriophage.
5. Write a short note on cartilage tissue.

**Q1. B. GIVE SIGNIFICANCE OF (Any 3) 3**

1. MacConkey's agar
2. Conjugation
3. Biological media
4. R plasmid.
5. Function of neuroglial cells.

**Q2. A. ANSWER THE FOLLOWING (Any 3) 9**

1. Describe the methods used for selective growth of organisms.
2. Define dye. Add a note on different types of dyes.
3. Write a note on four different types of culture media.
4. Explain in detail acid fast staining.
5. Write a note on classification organisms with suitable examples.

**Q2. B. EXPLAIN THE TERMS (Any 3) 3**

1. Agar
2. Mordant
3. Haemocytometer
4. Chromophores
5. Synthetic media

**Q2. C. MATCH THE FOLLOWING****3**

A	B	C
Psychrophilic	Azine group	Amino acid
Basic chromophores	Cysteine	<i>Pseudomonas fluorescens</i>
Sulphur	0°C - 20°C	Neutral red

**Q3. A. ANSWER THE FOLLOWING (Any 3)****12**

1. Discuss Griffith's experiment with suitable diagram.
2. Explain the phenomenon of multiple alleles with the help of blood grouping.
3. Describe the role of bacteriophage in transduction.
4. Enlist important characteristics of multiple alleles.

**Q.3B. ANSWER IN ONE WORD THE FOLLOWING (Any 3)****3**

1. Phenotype of  $A^Y/A$
2. Genotype of AB Blood group
3. Frequency with which gene manifest in a population
4. Scientist who first explained Transduction.
5. Extra chromosomal material involved in Conjugation.
6. Phenotype of  $W^e/W$ .

**Q4. A. ANSWER THE FOLLOWING (Any 3)****12**

1. Explain why drosophila is used as a model organism.
2. Write a short note on *S. cerevisiae* as a model organism.
3. Give a short note on ciliated and glandular epithelial tissue.
4. Differentiate between white and yellow fibrous connective tissues.
5. Give a short note on voluntary muscles

**Q.4. B. Attempt (Any 3)****3**

1. Two properties of pisum sativum as a model organism.
2. Two properties of E.coli as a model organism.
3. Explain goblet cells.
4. Draw columnar epithelial cells.
5. Explain Neurolemma.

**B.N.BANDODKAR COLLEGE OF SCIENCE, THANE**  
**SECOND TERM EXAMINATION, MARCH 2010 - 2011**

**F.Y. B.SC.**

**MARKS: 60**

**BIOTECHNOLOGY PAPER I**

**TIME: 2 hrs**

---

- N.B.** 1. All the questions are compulsory.  
2. Illustrate your answers with suitable examples.  
3. All Questions carry equal marks.

**Q1. A WRITE SHORT NOTES ON (Any 3) 12**

1. Physical & chemical theories of staining
2. Different types of media
3. Areolar tissues.
4. Ciliated and glandular epithelial tissue.

**Q1. B. GIVE SIGNIFICANCE OF (Any 3) 3**

1. SIBA
2. Transformation
3. Mordant
4. F plasmid
5. Drosophilla
6. Albino mice

**Q2. A ANSWER THE FOLLOWING (Any 3) 9**

1. Write a note on nutrients required by bacteria.
2. Why do we carry out staining? What is the difference between dyes & stains?
3. Describe various parameters for growth of organisms.
4. Distinguish between acidic & basic dyes.
5. Write a note on preservation of cultures.

**Q2. B DEFINE THE TERMS (Any 3) 3**

1. Non synthetic media
2. Dye
3. Leuco compounds
4. Auxochromes
5. Electronic particle chamber

**Q2. C. MATCH THE FOLLOWING****3**

A	B	C
Agar	carbolfuchsin	<i>M.tuberculosis</i>
Thermophilic	Glidium cornecum	<i>Thermus aquaticus</i>
Acid fast staining	55°C - 85°C	Melting point 95°C

**Q.3 A ANSWER THE FOLLOWING (Any 3)****12**

1. Discuss Conjugation experiment with suitable diagram.
2. Explain the effect of temperature on gene expression.
3. Discuss Complementation test with suitable example.
4. Enlist important characteristics of multiple alleles.

**Q.3B. SCHEMATICALLY/ DIAGRAMATICALLY EXPLAIN (Any 1)****3**

1. Inheritance of a lethal gene  $A^Y$  in mice.

OR

1. Bacterial Transformation.

**Q4. A ANSWER THE FOLLOWING (Any 3)****12**

1. Discuss characteristics of *E. coli* as a model organism.
2. Explain why Mendel selected *Pisum sativum* for his genetic experiment.
3. Give short note on histology of compound epithelial cell.
4. Give short note on histology of bone.
5. Give short note on medullated nerve fiber.

**Q4. B ATTEMPT (Any 3)****3**

1. Explain goblet cells.
2. Draw cuboidal epithelial cells.
3. Enlist different types of muscles.
4. Explain sarcolemma.
5. Explain nodes of Ranvier