

B. N. BANDODKAR COLLEGE OF SCIENCE, THANE

II SEMESTER EXAMINATION MARCH 2013

F.Y.B.Sc.

Biotechnology

USBT-201

Duration 2 hrs

Total Marks-60

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 two).

12

- 1) Describe the different parts of a compound microscope along with their respective functions.
- 2) What is differential staining? Explain it with the help of acid-fast staining.
- 3) Write a note on Romanowsky's stains.
- 4) Describe the different types of light microscopy.

Q.1 B Answer the following (Any three).

3

- 1) What is the difference between a dye and a stain?
- 2) What is monochrome staining?
- 3) Give the formula for numerical aperture.
- 4) What is the significance of heat-fixing a smear?
- 5) What is the purpose of using a fixative?
- 6) Give 1 example each of acidic and basic stains.

P.T.O.

- Q.2 A. Answer the following (Any two)** **12**
- 1) Explain the phenomenon of codominance with a suitable example.
 - 2) Write a note on the effect of hormones on gene expression.
 - 3) Describe Griffith's experiment.
 - 4) Write a note on conjugation.
- Q.2 B Answer the following (Any three)** **3**
- 1) Define a prophage.
 - 2) What is transduction?
 - 3) What is penetrance of a gene?
 - 4) What is incomplete dominance?
 - 5) Define: lethal allele.
 - 6) Give 2 applications of transformation.
- Q.3 A Answer the following (Any two)** **12**
- 1) Write a note on cardiac muscles.
 - 2) Give an account of *E. coli* as a model organism for genetic experimentation.
 - 3) Give the general features and functions of epithelial tissue.
 - 4) Write a note on the different types of cartilage.
- Q.3 B Answer the following (Any three)** **3**
- 1) Mention the 2 important properties of neurons?
 - 2) Where is germinal epithelium located?
 - 3) What is ossein?
 - 4) State 2 characteristics of albino mice which makes it genetic experimental model.
 - 5) Give 2 functions of skeletal connective tissue.
 - 6) Why smooth muscles are also called as visceral muscles?

Q. 4 A Answer the following.

12

- 1) Why some bacteria stain purple and others red during Gram's staining?

OR

- 1) Write a note on structure of dyes.
- 2) Explain how temperature affects gene expression in Himalayan rabbits.

OR

- 2) Describe the experiment which proved that physical contact is essential for genetic exchange between bacteria.
- 3) Write a note on Haversian system.

OR

- 3) Draw a neat, labeled diagram of structure of neuron. Distinguish between dendrites and axon.

Q. 4 B Answer the following.

3

- 1) What is the difference between a simple and a compound microscope?

OR

- 1) Give the significance of mordant in staining.
- 2) Name the scientists who discovered the process of transduction.

OR

- 2) Define: auxotroph.
- 3) What is the function of a ligament?

OR

- 3) Give two examples of exocrine glands.
