

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

F.Y. B.Sc.

MARKS: 60

BIOTECHNOLOGY PAPER II

TIME: 2 hrs

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

Q.1A. ANSWER THE FOLLOWING (Any3) 12

1. Write a note on different mechanisms of innate immunity
2. Discuss Humoral immunity.
3. Justify proteins have different biological functions in human body.
4. Discuss various forms of RNA with their role.
5. Discuss various phases of cell cycle.

Q.1B. GIVE SIGNIFICANCE OF (Any 3) 3

1. Active site
2. IgE
3. Fibrous protein
4. Hypervariable region.
5. Cyclin dependent kinases.

Q.2A. ANSWER THE FOLLOWING (Any 3) 12

1. Write a short note on Nucleosome.
2. Explain the structure of eukaryotic plasma membrane.
3. Write in brief morphology of Fungi.
4. Write a short note on reproduction in yeast.
5. State biological significance of DNA with respect to
 - i) Chemical stability.
 - ii) Transmission of genetic information from parent to progeny.

Q.2B. ATTEMPT (Any 3) 3

1. Any two properties a genetic material should possess.
2. Name two asexual spores of fungi.
3. Explain Role of spindle check point.
4. Sub cellular localization.

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

1. Discuss the classification of proteins.
2. Enlist the features of double stranded DNA structure.
3. Explain classification of enzyme with suitable example.
4. Distinguish between Fibrous protein and Globular protein.

Q.3B. DEFINE THE FOLLOWING (Any 3) 3

1. Enzyme
2. Zwitter ion
3. Ligases
4. Transferases
5. Isoelectric Ph
6. DNA

Q.4A. ANSWER THE FOLLOWING (Any 3) 12

1. Distinguish between non adaptive and adaptive immune response
2. Write a note on IgM
3. Justify various factors affect the extent of recognizable non-selfness of molecule
4. Give details of general structure of globulin that is a key player of Humoral immune system

Q.4 B. ANSWER IN ONE SENTENCE (Any 3) 3

1. Define local immunity
2. Name the immunoglobulin isotypes that are capable of transcytosis
3. Name the granulocytes that play important role in inflammation
4. Define plasma cell
5. Name the two sub-populations of T cells.
6. Define APC

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2. Illustrate your answers with suitable examples.
3. All Questions carry equal marks.

- Q.1A. ANSWER THE FOLLOWING (Any 3) 12**
1. Write a note on factors affecting innate immunity
 2. Discuss cell mediated immunity
 3. Discuss the Lock and Key model for enzyme specificity.
 4. Enlist important features of Fibrous protein.
 5. Discuss various phases of cell cycle.
- Q.1B. GIVE SIGNIFICANCE OF (Any 3) 3**
1. Disulphide linkages in protein
 2. IgD
 3. Globular protein
 4. Hinge region
 5. Cyclin dependent kinases.
- Q.2A. ANSWER THE FOLLOWING (Any 3) 12**
1. Write a short note on cell cycle check points.
 2. Give a short note on eukaryotic plasma membrane
 3. Give short note on asexual reproduction in fungi.
 4. Diagrammatically explain reproduction in yeast.
 5. State biological significance of DNA with respect to
 - a) Storage and transmission of genetic information by DNA..
 - b) Mutations.
- Q.2B. ANSWER THE FOLLOWING (Any 3) 3**
1. Explain term Plasmalemma.
 2. Name two sexual spores of fungi.
 3. Any two properties a genetic material should possess.
 4. Name types of histones present in DNA.
 5. Sub-cellular localization.

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

1. Explain in detail the secondary structure of protein.
2. Enlist the features of Watson and Crick model.
3. Discuss in detail structure of keratin.
4. Distinguish between Fibrous protein and Globular protein.

Q.3B. DEFINE THE FOLLOWING (Any 3) 3

1. Nucleotide
2. Zwitter ion
3. Hydrolases
4. Isomerases
5. Isoelectric pH
6. Active site

Q.4A. ANSWER THE FOLLOWING (Any 3) 12

1. Distinguish between active and passive immunity
2. Write a note on IgG
3. Justify various factors affect the extent of recognizable non-selfness of molecule
4. Give details of different levels of immunity.

Q.4 B. ANSWER IN ONE SENTENCE (Any 3) 3

1. Define herd immunity
2. Name the immunoglobulin isotypes that are having more than one form
3. Name the steps of inflammation
4. Define plasma cell
5. Name the two APCs.
6. Define Lymphoblast