

Seat No. :

AR-102

May-2016

B.Sc., Sem.-IV

**CC-205 : Biotechnology
(Immunology)**

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following : 14
(A) Define Antigen and give its properties.
OR
Describe different classes of antibodies.
- (B) Explain the types and determinants of antigenicity.
OR
Differentiate monoclonal and polyclonal antibodies.
2. Answer the following : 14
(A) Differentiate the Innate immunity and Adaptive immunity.
OR
Explain the origin and types of principal cells in immune system.
- (B) How does spleen provide adaptive immunity to blood infections ?
OR
Explain the different types of immune responses.
3. Answer the following : 14
(A) What is MHC ? Explain its role in immune response.
OR
Why and how the body rejects organ transplants ?
- (B) Give an overview of immunosuppression.
OR
Discuss Cancer and the immune system.

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4. Answer the following : 14

(A) What happens when the body's lymphocytes fail to recognize its own antigen ?

OR

Explain Rheumatoid arthritis and Graves disease.

(B) Define hypersensitivity and name associated diseases.

OR

List three types of immunodeficiency disorders.

5. Answer the following in brief : 14

- (1) Expand DAMPs and PAMPs.
 - (2) What are haptens ?
 - (3) What is inflammation ?
 - (4) What are effector cells ?
 - (5) Who coined the term 'Vaccination' ?
 - (6) Differentiate MIF and MLR.
 - (7) What are autoantibodies ?
 - (8) Give an example of carrier.
 - (9) What is the role of vaccine in immunity ?
 - (10) Which class the antibody secreted immediately after exposure to antigen belongs to ?
 - (11) What is an Rh Factor ?
 - (12) Explain an epitope.
 - (13) What is an idiotypic ?
 - (14) Name the antibody found primarily in granular secretions.
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May-2016

B.Sc. Sem.-IV

**CC-204 : Biotechnology
(Basic Genetics)**

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following : 14
- (A) Discuss fine structure analysis of gene done by Benzer over rII gene.
- OR**
- Write Mendel's laws on inheritance and explain any one in detail.
- (B) Explain the method for constructing genetic map by recombination frequency analysis.
- OR**
- Define and explain with example (1) Co-dominance (2) Genetic linkage.
2. Answer the following : 14
- (A) Explain Cairn's models of chromosomal replication with diagrams.
- OR**
- Describe the role of various protein factors in the process of DNA replication.
- (B) List the means of DNA repair mechanism and explain any one in detail.
- OR**
- Write a detailed note on genetic code.
3. Answer the following : 14
- (A) Define mutagen and explain mutagenic action of UV light.
- OR**
- List phenotypic mutants types of bacteria and explain any two of them.
- (B) Give principle, procedure and importance of Ames Test.
- OR**
- Compare and Contrast mutations : (1) Spontaneous Vs Induced (2) Insertion Vs Deletion.

4. Answer the following : 14
- (A) Explain Conjugation with diagram and define terms F^+ , Hfr and F' .
- OR**
- Explain Insertion and Transposable elements of prokaryotes.
- (B) Discuss general properties of bacterial plasmids and discuss R-factor in detail.
- OR**
- Discuss the Griffith's experiment on pneumococcal transformation.
5. Answer the following in brief : 14
- (1) Name two sex-linked traits.
 - (2) What is Back cross ?
 - (3) What is meaning of Homozygous Recessive gene ?
 - (4) Who proved semi-conservative mode of DNA replication ?
 - (5) What is use of Equilibrium Density Gradient Centrifugation ?
 - (6) Which reaction is catalyzed by enzyme Reverse Transcriptase ?
 - (7) List three terminating codons.
 - (8) Name two t-RNA binding sites over ribosome.
 - (9) What is meaning of E.coli Lys mutant ?
 - (10) Who proved that DNA replication is semi-conservative ?
 - (11) What are conditionally lethal mutants ?
 - (12) What are bacteriocins ?
 - (13) Define Transduction.
 - (14) Name dye acting as mutagen.
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