SEAT No._____ **No. of Printed Pages: 2**

[107]

Sardar Patel University
SY B.Sc, Biotechnology 3rd Semester
Course No-USO3CBIT01 (Fundamentals of Biotechnology-I)
Date -01/01/2021

Time – 2hrs 02:00 to 04:00 pm **Marks-70**
Day - Friday

NOTE- Figure in the right indicates marks .
All questions are compulsory. Make necessary diagram wherever needed.

Q.1. Multiple Choice Question (MCQ). Select correct answer from given MCQ. (10marks)

1.a. Which of the following forms of DNA considered as important forms or commons forms-
(A) A DNA (B) B DNA
(C) C DNA (D) Z. DNA

1.b. Which are purines bases of DNA?
(A) Adenine and Guanine (B) Adenine and Thymine
(C) Cytosine and Thymine (D) Cytosine and Guanine

1.c. Extrachromosomal DNA of bacteria are commonly known as –
(A) Plasmid (B) Phagemid
(C) Cosmid (D) Fosmid

1.d. Specific defence mechanism against disease comprises
(A)Physical barrier (B)Lysozyme
(C)Phagocytes (D)Immune system

1.e. The method of passive immunity was discovered by
(A)Pasteur (B)Von Behring
(C)Koch (D)Jenner

1.f. Number of blood group antigens is-
(A) Two (B) Three
(C) Twenty (D) Thirty

1.g. Immunoglobulins (antibodies) are basically:
(A) Lipoproteins (B) Phospholipids
(C) Glycoproteins (D) Nucleoproteins

1.h. DNA replication requires-
(A) DNA polymerase (B) RNA polymerase
(C) Reverse transcriptase (D) Exonuclease

1..i. Usual method of DNA replication is-
(A) Semiconservative (B) Conservative
(C) Dispersive (D) Nonconservative

1.j Formation of RNA over the template of DNA is
(A) Replication (B) Translation
(C) Transversion (D) Transcription

Q2. Fill in the blanks/true false **(08marks)**

a. DNA double helix model were given by----------

b. To protect our body against infection is called----------

c. Antigen are---------- by nature

d. The point where replication started is called----------

e. DNA is absent in cytoplasm. (True/False)

f. Innate immunity is not developed after 1 year (True/False)

g. Antibody is also called immunoglobulin. (True/False)

h. DNA replication is essential for survival of cell. (True/False)

Q.3. Short questions (2 marks each) attempt any ten **(2x10=20marks)**

[1] What is Chargaff base pair rule?
[2] Define genetic code.
[3] Write short notes on nucleotide.
[4] What do you mean by immune response.
[5] Write brief notes on application of immunity
[6] Enlist the important organ that control immune system ?
[7] Define antibody.
[8] What is Rh factor.
[9] What is antigen ?
[10] Write brief notes on okazaki DNA fragments
[11] Give the significance of DNA replication.
[12] What is ori C?

Q.4. Attempt any four **(4x8=32)**

Q.1. Explain the structure of DNA double helix with neat diagram. **[8]**
Q.2. Discuss the structure and function of transfer RNA? **[8]**
Q.3. Enlist and explain different types of immunity. **[8]**
Q.4. Differentiate between primary and secondary immune response with examples. **[8]**
Q.5. Write detail account on the classes and properties of antigen. **[8]**
Q.6. Describe the various classes of antibody. **[8]**
Q.7. How DNA synthesis occurs at leading and lagging strand? Explain diagrammatically. **[8]**
Q.8. Write notes on proteins and enzyme needed in DNA replication. **[8]**

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