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[I4/A-15]

# Sardar Patel University

## Sy.B.Sc. on demand Semester examination-2022(24/09/22)

B.Sc 3rd Semester, Subject – Biotechnology

**Course no- US03CBIT01 Fundamentals of Biotechnology**

**Time –2 hrs(12.30 to 2.30PM)** Marks-70

**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 DNA double helix model was given by
(A) Grilifth and Benda (B) Hershey and Chase
(C) Watson and Crick (D) Wilkins and Rose

1.b.Uracil is Nitrogen bases present in
(A) DNA (B) RNA
(C) Protein (D) Both DNA and RNA.

1.c. The example of extra chromosomal DNA of bacteria is
(A) Mesosomes (B) Capsule
(C) Flagella (D) Plasmid

1.d Acquired immunity is also called
(A)Adaptive immunity (B)Specific immunity
(C)Nonspecific immunity (D)Both A and B

1.e. The cells involved in defence against pathogens are
(A) Phagocytes (B) T-lymphocytes
(C) B-lymphocytes (D) All the above

1.f Phagocytes of innate immunity are
(A)Neutrophils (B)Macrophages
(C)Monocytes (D)All the above

1.g. Opsonisation is carried out by
(A)IgM (B)IgG
(C)IgA (D)IgD and IgE

1..h. Enzyme required for removing RNA primer during DNA replication is
(A) Primase (B) Ligase
(C) DNA polymerase I (D) DNA polymerase III

1..i Okazaki segments are formed during
(A) Transduction (B) Transcription
(C) Replication (D) Translation

1.j Semiconservative replication of DNA was demonstrated by
(A) Khorana and Jolly (B) Watson and Crick
(C) Taylor and others (D) Meselson and Stahl

P.T.O

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

a. Watson and Crick given the model of ----------

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

c. Capsule of bacteria are example of ----------

d. DNA replication is ----------

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

f. Innate immunity is developed after 3 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 nucleoside?
[2] Write brief notes on function of DNA
[3] What do you mean by Wobble hypothesis?
[4] Write a brief notes on passive immunity.
[5] Write brief notes on component of innate immunity.
[6] Write a brief notes on significance of immunity.
[7] Define antigenic determinants.
[8] Write a brief note on Rh system.
[9] What is IgM?
[10] Define replication fork.
[11] Write a brief note on significance of DNA replication.
[12] Write a note on role of primer in DNA replication.

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

1. Explain Watson and Crick model of DNA double helix with neat diagram. [8]
2. Explain clover leaf model of tRNA in detail. [8]
3. Write short notes on primary and secondary immune response with examples. [8]
4. What do you mean by cell mediated immunity? Explain in detail. [8]
5. How can you determine blood group of a person? Explain. [8]
6. Describe the various classes of antibody and their function. [8]
7. Describe leading and lagging strand DNA synthesis with neat diagram. [8]
8. Enlist and explain various types of proteins required at replication fork. [8]

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