

S

[55/A-18]

SEAT No. _____

No of printed pages: 02

SARDAR PATEL UNIVERSITY

B.Sc. III Semester Examination 2018

Subject: Biotechnology (Title-Fundamental of Biotechnology -I)

Course: US03CBIT01

Date: 20th November 2018, Tuesday

Time: 02:00 pm to 5:00pm

Total Marks: 70

Q.1 Multiple Choice Questions

[10]

- i) Which of the following is not a pyrimidine base?
 - a) Adenine
 - b) Cytosine
 - c) Thymine
 - d) Uracil
- ii) Nucleotide consists of _____
 - a) Nucleoside & Phosphate
 - b) Sugar & Phosphate
 - c) Nitrogen bases
 - d) Sugar & nitrogen base
- iii) How many stop codons are there in the genetic code dictionary?
 - a) Three
 - b) Two
 - c) Four
 - d) Five
- iv) A mature B cells that has not interacted with antigen specific to its cell surface antibody is called _____ B cells.
 - a) Naive
 - b) Active
 - c) Functional
 - d) Mature
- v) No memory cells are formed in _____ immunity.
 - a) Humoral
 - b) Innate
 - c) Cell mediated
 - d) Acquired
- vi) _____ can be made immunogenic by coupling it to the carrier protein
 - a) Hapten
 - b) Avidin
 - c) Superantigen
 - d) Adjuvants
- vii) Blood grouping was discovered by _____ in 1904.
 - a) Von Behring
 - b) Louis Pasteur
 - c) Alexander
 - d) Karl Landsteiner
- viii) Replication of prokaryotic DNA requires _____
 - a) Helicase & Primase
 - b) SSB & Topoisomerase
 - c) Gyrase & ligase
 - d) All of these
- ix) The Okazaki fragments are joined by _____
 - a) Primase
 - b) Ligase
 - c) Polymerase
 - d) Gyrase
- x) The new DNA strand is synthesized in _____ direction.
 - a) 5'—3'
 - b) 2'—3'
 - c) 3'—5'
 - d) All of these

①

(P.T.O)

- Q.2 Answer the following questions in short. (Attempt any 10) [20]**
- i) Draw neat and labeled diagram of double helix Watson & Crick structure of DNA.
 - ii) Give the basic features of plasmid.
 - iii) Write about A-form of DNA.
 - iv) What is humoral immunity?
 - v) Write in brief cell mediated immunity.
 - vi) Compare between active & passive immunity.
 - vii) What are epitopes? Give its significance.
 - viii) Enlist the factors influencing immunogenicity.
 - ix) What are adjuvants?
 - x) What is Ter-tus complex?
 - xi) Differentiate between unidirectional & bidirectional replication.
 - xii) Write about DNA polymerase III.
- Q.3 a) Give an account on clover leaf model of tRNA. [06]**
b) Discuss in detail Wobble hypothesis. [04]
- OR**
- Q.3 a) Define Genetic code. Describe the properties of genetic code. [06]**
b) Write short note on mRNA [04]
- Q.4 Define Immune response. Explain in detail types of immune response. [10]**
- OR**
- Q.4 a) Discuss in detail acquired immunity. [06]**
b) Give a comparative account on T lymphocyte & B lymphocyte. [04]
- Q.5 a) Explain in detail structure & function of antibody. [07]**
b) Give the biological function of IgA. [03]
- OR**
- Q.5 a) Discuss in detail ABO-Rh system blood group. [05]**
b) Write about the structure & biological function of IgM. [05]
- Q.6 a) Describe the process of initiation in prokaryotic replication with diagram. [06]**
b) Explain rolling circle model of replication with suitable example. [04]
- OR**
- Q.6 a) Describe the process of elongation in prokaryotic replication with diagram. [05]**
b) Discuss in detail an experiment performed by Meselson & Stahl to prove semi conservative mode of replication. [05]

— X —
 (2)