

[A-6] Seat No. _____

No. of Printed Pages: 02

SARDAR PATEL UNIVERSITY

M. Sc. Integrated Biotechnology, Third Semester Examination

Day and Date: Friday, 29-04-2016

Time: 10:30 am to 01:30 pm

Paper Code and Subject: PS03CIGB05, Molecular Biology-I

Total Marks: 70

Q-1 Multiple choice questions (All are compulsory).

[8]

- 1) The first experimenters to use Griffith's transformation assay to identify the genetic material were:
a) Avery, MacLeod, and McCarty b) Hershey and Chase
c) Franklin and Wilkins d) Watson and Crick.
- 2) Clusters of highly repetitive DNA located near the centromeres and telomeres are called
a) Nucleosomes b) Euchromatin c) Chromatids d) Heterochromatin
- 3) The total DNA in a cell is referred to as the:
a) library b) genome c) chromosomal DNA d) None of these
- 4) RNA differs from DNA in all the following except:
a) RNA contains uracil and DNA contains thymine b) RNA is single stranded and DNA is double stranded
c) RNA contains ribose and DNA contains deoxyribose
d) None of the above
- 5) The _____ is used to connect bacterial cells together during the process of conjugation.
a) Nucleoid b) Episome c) Pilus d) Crown gall
- 6) Which molecule contains the genetic code?
a) DNA b) mRNA c) tRNA d) rRNA
- 7) DNA binding is mediated by:
a) zinc finger motifs b) helix-turn-helix motifs c) helix-loop-helix motifs d) all of the above
- 8) Which enzymes remove supercoiling?
a) Helicases b) DNA polymerases c) Primases d) Topoisomerases

Q-2 Answer the following questions in short. (Any Seven)

[14]

- (1) What is palindromic DNA?
- (2) Draw the structure of mitochondrial DNA.
- (3) What is satellite DNA and its importance?
- (4) What is SnRNA?
- (5) Write a note on Heterochromatin.
- (6) Write a note on artificial plasmid.
- (7) Describe Resistance plasmid.
- (8) Write a note on stop codon.
- (9) Write a note on DNA polymerase.

(1)

P.T.O

- Q-3 (A) Explain with an experiment to prove that DNA is a genetic material? [6]
(B) Draw and explain the structure and properties of DNA in detail. [6]

OR

- (B) Differentiate between A, B, and Z form of DNA. [6]

- Q-4 (A) Discuss in detail structure and importance of F (fertility) plasmid. [6]
(B) Draw the structure and write the importance of Ti (Tumor inducing) plasmid. [6]

OR

- (B) Discuss the structure and properties of ribosomal RNA (rRNA). [6]

- Q-5 (A) Discuss in detail Cot curve and C value paradox. [6]
(B) Explain the deciphering of genetic code in detail. [6]

OR

- (B) Draw the genetic code table and give the properties of genetic code. [6]

- Q-6 (A) Discuss in detail structure and types of binding motifs with example? [6]
(B) Discuss Supercoiling in detail. [6]

OR

- (B) Explain Nucleosomes model for packaging of DNA in detail. [6]
