

Seat No.: _____

[58]



No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY
Bachelor of Science (Semester 5) Examination - 2025
Subject Code: US05CBCH51 BIOCHEMISTRY
Subject Title: MOLECULAR BIOCHEMISTRY

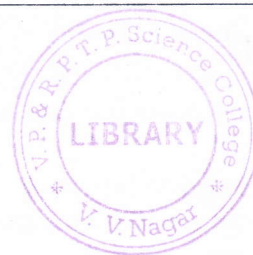
Date: 04/10/2025 (Saturday)
Time: 10.00 AM to 1.00 PM

Total: 70 Marks

Note: 1) Figure to the right indicate full marks.

2) Write answer of MCQ in sequence.

Q.1 Select proper option from following MCQ.



[10]

- 1) Who give the concept of gene?
a) Beadle and Tatum b) Gregor Mendel
c) Friedrich Miescher d) Richard Altman
- 2) Gene present in ____?
a) In DNA b) In RNA c) In protein d) in lipid
- 3) How many Nucleosomes are associated with mini chromosome?
a) 23 b) 22 c) 21 d) 46
- 4) Polymerization rate of DNA polymerase II is _____ nu/sec.
a) 40 b) 50 c) 70 d) 100
- 5) 5-3 Polymerisation activity is usually by ____ DNA polymerase.
a) I b) II c) III d) ALL
- 6) Which of the following protein unwind the DNA ?
a) DnaA b) DnaB c) DnaG d) Dna C
- 7) The non-coding segment of RNA is called _____.
a) intron b) exon c) splicing d) transcript
- 8) RNA polymerase I has the central function of synthesizing _____.
a) rRNA b) mRNA c) tRNA d) 28s rRNA
- 9) Which of the following modification is possible in milk protein?
a) glycosylation b) carboxylation c) methylation d) phosphorylation
- 10) Which of the following factor recognize UAA.
a) Rf 1 and Rf2 b) Rf 2 c) Rf 3 d) Rf 4

Q2. Answer in short. (Any ten)

[20]

1. Define Chromosome and Chromatin.
2. What is Nucleosomes?
3. What is mobile gene? Write its function.
4. Define replication fork and replication.
5. Write fundamental rules of DNA Replication.

[12]

[Pto]

6. Write activities of DNA polymerase- I
7. Explain spliceosome.
8. Write function of kinase and polyadenylate polymerase.
9. What is intron and exon.
10. What is initiation codon?
11. Explain ribosome.
12. Write 2 functions mRNA ?.



Q-3 Answer the following

- (a) Define gene? Describe the concept of gene. [5]
- (b) Define genome and explain salient feature of Eukaryotic genome. [5]

OR

Q-3 Short note on following

- (a) Salient feature of Prokaryotic genome [5]
- (b) Salient feature of Viral genome. [5]

Q-4 Answer the following

- (a) Explain Termination of replication. [5]
- (b) Explain DNA replication is semi conservative. [5]

OR

Q-4 Write short note on

- (a) Initiation of replication [5]
- (b) Okazaki fragments. [5]

Q-5 explain the following

- (a) Initiation of transcription. [5]
- (b) 5' cap formation in mRNA. [5]

OR

Q-5 write short note on following

- (a) 3' poly[A] tail formation in mRNA. [5]
- (b) Mechanism of group II. [5]

Q-6 Explain the following

- (a) Characteristics of Genetic Code [10]

OR

- (b) Explain inhibition of protein synthesis by antibiotics and toxins. [10]