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SARDAR PATEL UNIVERSITY
Bachelor of Science (Semester 5) Examination - 2025
Subject Code: US05CBCH21 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) _____ Nucleosomes are associated with mini chromosome?
a) 23 b) 22 c) 21 d) 46
- 2) Who give the concept of gene?
a) Beadle and Tatum b) Gregor Mendel
c) Friedrich Miescher d) Richard Altman
- 3) Gene present in _____?
a) In DNA b) In RNA c) In protein d) in lipid
- 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 OF THESE
- 6) Which of the following protein unwind the DNA ?
a) DnaA b) DnaB c) DnaG d) Dna C
- 7) The coding segment of RNA is called _____.
a) intron b) exon c) splicing d) transcript
- 8) RNA polymerase II has the central function of synthesizing _____.
a) rRNA b) mRNA c) tRNA d) 28s rRNA
- 9) Which of the following modification is possible in blood clotting protein?
a) glycosylation b) carboxylation c) methylation d) phosphorylation
- 10) Which of the following toxin present in castor bean.
a) None of these b) Diphtheria c) Ricin d) Streptomycin

Q2. Answer in short. (Any ten)

[20]

1. Define Gene and where it is present.
2. What is Nucleosomes?
3. What is col-plasmid?
4. Define replication fork and replication.
5. Write fundamental rules of DNA Replication.

[42]

[P.T.O.]



6. Write activities of DNA polymerase- II
7. Explain RNA processing.
8. Write function of kinase and polyadenylate polymerase.
9. What is intron and exon.?
10. What is termination codon?
11. Define ribosome and write its types?
12. Define translation.



Q-3 Answer the following

- (a) What is concept of gene? Explain in detail. [5]
- (b) Define genome and explain Salient feature of Prokaryotic genome. [5]

OR

Q-3 Short note on following

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

Q-4 Answer the following

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

OR

Q-4 Write short note on

- (a) Termination 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 I splicing. [5]

Q-6 Explain the following

Characteristics of Genetic Code [10]

OR

Q-6 Explain post translational modification of protein synthesis. [10]