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Candidate's Seat No :_____

B.Sc. Sem.-5 Examination

CC-302

Biochemistry (O & N)

March-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Instructions:

1) All Questions in Section I and Section II are compulsory and carry equal marks

2) Illustrate your answers with neat diagrams wherever necessary

Time: 2. 30 hrs. **Total Marks:70**

Section - I

Q1(A) Discuss the experiment of Hershey and Chase .Give its importance in Molecular biology **(07)**

(B) Explain: Melting curve of DNA **(07)**

OR

Q1. (A) What is the role of followings in replication: **(07)**

1. Helicase.2. Primase. 3. DNA ligase. 4. Topoisomerase

(B) 1. What are Okazakifragments? Explain in brief **(07)**

2. Importance of DNA polymerase I in replication

Q2. (A) 1.Explain in brief: Transcription bubble **(08)**

2. Capping, Tailing and Splicing in RNA processing in Eukaryotes

(B) Answer the followings: **(06)**

1. What is degeneracy of genetic code?

2. Is genetic code universal? Why? 3. What is wobbles' hypothesis?

OR

Q2. (A) Explain termination in translation **(07)**

(B) Discuss Trp operon as model of regulation of gene expression **(07)**

Q3. (A) Define: Mutagenic agents with example. Explain mode of action of a base analogue with an example **(09)**

(B) Define transposons and explain how they move from one site to another site in genome **(05)**

OR

P.T.O.

Q3. (A)	Explain: Excision repair mechanism of DNA	**(07)**
(B)	What is intercalation? Name the dye which acts as an intercalating agent and explain its mechanism	**(07)**
Q4. (A)	Define 1. Clone 2. Selectable marker. 3. Replica plating 4. Restriction Endonucleases.5.Vector	**(05)**
(B)	Explain in detail the isolation and purification of chromosomal DNA. How do you check the purity of DNA	**(09)**

OR

Q4. (A)	Write a note on: Gene Libraries.	**(07)**
(B)	Discuss Southern Blotting Technique	**(07)**
Q5.	**Answer the followings in brief:** (ANY SEVEN) (ANY-07)	**(14)**
1.	Define: 1. Replication 2. Transcription	
2.	Name the scientists who have deciphered genetic codes	
3.	What are Shine-Dalgerno sequences? What is their role in translation	
4.	What is the contribution of: 1. Francois Jacob & Jacques Monod 2. Barbara Mc Clintock in molecular biology	
5.	What is Tm? What is its relation with base composition of DNA	
6.	What is the effect of: 1.Tetra cyclin &2.Puromycin on translation	
7.	Draw and labeled Lac operon	
8.	Define: 1.Introns. 2. Exons	
9.	What is Hyperchromacity?	
10.	State two applications and two hazards related to recombinant DNA technology.	
11.	What is the role of Agarose and Ethidium Bromide in gel electrophoresis?	
12.	Explain the nomenclature of Restriction Endonucleases.	