

School: Program/s: School of Science **Biomedical Science**

Year: 2nd

Semester: III

Examination:

End Semester Examination

Examination year:

December - 2022

Course Code: BM203

Course Name: Molecular Biology

Date: 14/12/2022

Total Marks: 40

Time: 11:30am to 1.30pm

Total Pages: 2

Instructions:

→ Draw labelled diagrams where ever necessary

→ *COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q.	Details		Marks	COs*	BTL#
1. a. b. 2. a. b.	se the correct option/s: Regulatory proteins turn tracloser to the promoter and a promoter; this site is the regulatory site operator site Which protein mentioned be Ribosome Restriction Endonuclease Which of the following RNA during protein synthesis? rRNA b. mRNA The process of modification Replication DNA repair Which of the following is No. 5' capping	anscription off by binding to a site many times, even overlap the c. suppressor site d. transcriptional control site elow can reverse central dogma? c. Reverse Transcriptase d. RNA polymerase molecules is an adaptor molecule c. tRNA d. Initiator tRNA of pre mRNA is known as c. Translation d. RNA processing OT the step of mRNA processing? c. Polyadenylation	6	CO1, CO2, CO3	BT1, BT3, BT4

	6. Epigenetics refers to changes in:a. Gene expression c. Gene structure			
	b. DNA sequence d. All of these			
Q.2	True or False. Justify your answer (no marks without justification).			
	 Ribosomes are non-specific in a sense they can synthesize any polypeptide. Capping and tailing take place in prokaryotes. Operons are universally present in all organisms. In eukaryotes, transcription and translation take place in the same compartment. Single pre-mRNA being processed into a number of products is known as polyadenylation. 	5	CO1, CO2, CO3	BT1, BT3, BT4
Q.3	Answer in brief (5 x 2 marks = 10 marks)			
	 Why is genetic code said to be degenerate? What do AUG and UAG codons stand for? What is an anticodon, and where can it be found? Enlist the steps taken as a part of RNA processing What is epigenetics? 	10	C01, C02, C03	BT1, BT3, BT4
Q.4	Answer the following (Any Three) (3 x 3 marks = 9 marks) 1. Explain induction and repression regarding prokaryotic gene			
	regulation. 2. What is an operon, and who discovered it? 3. Explain what is meant by gene expression. 4. What are the mechanisms by which alternate splicing occurs? 5. Draw a schematic diagram explaining the mechanism of 5' capping.	9	CO1, CO2, CO3	BT1, BT3, BT4
Q.5	Answer in detail (Any Two) (2 x 5 marks = 10 marks)			
	 What is a 30s pre-initiation complex? Explain the role of the Shine-Dalgarno sequence in its formation. Explain the negative and positive regulation of lac operon briefly. Explain the mechanism of snRNP based splicing. Describe any one type of PTM. 	10	CO1, CO2, CO3	BT1, BT3, BT4

************End of Question Paper********