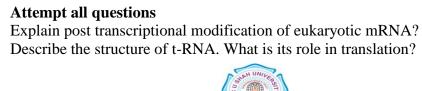
	Enrollm	nent No:	Exam Seat No:			
		C.U.SHA	H UNIVERSITY			
	Summer Examination-2018					
	Subject	Name: Molecular Biology				
	Subject Code: 4SC02MOB1		Branch: B.Sc (All)			
	Semeste	r: 2 Date: 04/05/2018	Time: 10:30 To 01:30 Marks: 70			
	Instruction	ons:				
			& any other electronic instrument is prohibited.			
	, ,		wer book are strictly to be obeyed.			
		Draw neat diagrams and figures Assume suitable data if needed.	(if necessary) at right places.			
	(.,					
Q-1		Attempt the following questi	ions:	(14)		
	a)	What is the role of sigma factor	or in transcription?			
	b)	Define genome				
	c)	Define origin of replication	d ' CDNA C DNA			
	d)	Name the enzyme that helps if What is TATA box?	n synthesis of DNA from RNA.			
	e) f)	What is the role DNA topoiso	merase?			
	g)	Define Promoter	merase:			
	h)	What is the role of rRNA in tr	anslation			
	i)	Name the different subunits of				
		j) What are three major requirements of replication?				
	k)	Define Transcription factors	•			
	l)	Name the four different nucle	eotides			
	m)		odons in Translation			
	n)	Define Okazaki fragments				
Atte	mpt any i	four questions from Q-2 to Q-	8			
Q-2		Attempt all questions		(14)		
~ -	a)		osomes in bacterial and eukaryotic cells. Draw a	(7)		
		comparative chart for it.	y	(-)		
	b)	Explain the enzymology of DI	NA replication?	(4)		
	c)	The following base sequence	represents part of the transcribing strand of DNA	(3)		
			nd base sequence of the complementary strand. and base sequence of the RNA that is synthesized			



Q-3

(14) (7)

(4)

	c)	What is the significance of the T _m (melting temperature) of DNA?	(3)
Q-4	a)	Attempt all questions Distinguish between: i) Operator and Promoter	
	1.	ii) Leading strand and Lagging strandiii) Intron and Exon	(4)
	b) c)	Briefly explain different steps in prokaryotic and eukaryotic transcription? Give three structural features of the B-form of the DNA double helix	(4) (3)
Q-5		Attempt all questions	(14)
	a)	What does it mean that replication is semi-conservative? Explain.	(7)
	b)	A certain mRNA codon is determined to be AUG.	(4)
		i) What is the anticodon in the tRNA?	
		ii) What sequence of DNA is responsible for the mRNA codon?	
	-)	iii) AUG codon codes for which amino acid?	(2)
	c)	What is meant by repression and derepression of gene expression? Give examples in support of your answer	(3)
Q-6		Attempt all questions	(14)
	a)	Describe the series of events that occur in a bacterial cell following the addition of lactose	(7)
	b)	What is mRNA splicing? Explain its mechanism in detail with the help of a diagram	(4)
	c)	Compare and contrast the structure of B-DNA with that of Z-DNA.	(3)
Q-7		Attempt all questions	(14)
	a)	Write a note on Organelle DNA	(7)
	b)	Briefly describe initiation and termination of protein synthesis in prokarotes	(4)
	c)	What is RNA interference? Explain its role in gene expression.	(3)
Q-8		Attempt all questions	(14)
	a)	Give a brief account of mechanism of action of Telomerase and explain the importance of telomerase in human biology	(7)
	b)	Outline the causes of DNA damage and give a brief account of DNA repair system.	(4)
	c)	What is genetic code? Discuss the characteristics of genetic code	(3)

