Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name : Molecular Biology
Subject Code : 4SC02MOB1 **Branch: B.Sc. (All), B.Sc. (Microbiology)**
Semester : 2 **Date : 29/04/2019** **Time : 02:30 To 05:30** **Marks : 70**

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) What is chargaff's rule? (1)
b) PCR was invented by Karry Mullis. True/false. (1)
c) State function of histone protein. (1)
d) _____ gave transforming principle. (1)
e) Define : Plasmid. (1)
f) Give any two example of repair mechanism. (1)
g) State ant two functions of DNA. (1)
h) Tm of DNA is dependant on which factors? (1)

i) Blender experiment was carried out by Hershey-chase. True/False. (1)
j) _____ invented structure of DNA. (1)
k) Differentiate between intron and exon. (1)
l) Define : Gene. (1)
m) Give any two example of covalent modification. (1)
n) Nucleic acid monomer link by phosphodiester bond. True/False. (1)

Attempt any four questions from Q-2 to Q-8

Q-2 **Write short note on :-** **(14)**
a) Mitochondrial DNA. **(7)**
b) Post Transcriptional modifications. **(7)**

Q-3 **Write short note on :-** **(14)**
a) Structure of DNA with labeled figure. **(7)**
b) Semi conservative replication process. **(7)**

Q-4 **Attempt all questions** **(14)**
a) Explain mismatch and excision repair mechanism. **(4)**
b) Note on Enzymes and proteins involved in DNA replication. **(7)**
c) Differentiate between eukaryotic and prokaryotic RNA polymerase. **(3)**

Q-5		**Write in brief :-**	**(14)**
	a)	Transcription in prokaryotes.	**(7)**
	b)	Differentiate between different forms of DNA.	**(7)**
Q-6		**Attempt all questions**	**(14)**
	a)	Explain in brief about Translation in Eukaryotes.	**(7)**
	b)	Short note on Condensation of chromatin structure with figure.	**(7)**
Q-7		**Attempt all questions**	**(14)**
	a)	Write a short note on Lac Operon.	**(6)**
	b)	Differentiate between prokaryote and eukaryote genome.	**(3)**
	c)	Explain rolling circle and Θ (theta) mode of replication.	**(5)**
Q-8		**Attempt all questions**	**(14)**
	a)	Explain similarity and difference between replication and transcription.	**(6)**
	b)	Note on types of RNA.	**(3)**
	c)	What is RNA interference and list out its applications.	**(5)**