

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name : Molecular Biology

Subject Code : 4SC02MOB1

Semester : 2

Date : 29/04/2019

Branch: B.Sc. (All), B.Sc. (Microbiology)

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.
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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)

