

B.Sc. ZOOLOGY FIFTH SEMESTER SESSIONAL EXAMINATION, 2023
MOLECULAR BIOLOGY
PAPER CODE: ZOO-HC-5016

Marks=30

Time=1 hour

Q1. Choose the correct answer:

1x5=5

- a. In the carbon skeleton of the pentose sugar in DNA, the attachment point of a base to form a nucleoside is
- i. C1
 - ii. C2
 - iii. C3
 - iv. C5
- b. The DNA binding protein that initiates the transcription of bacterial genes is called
- i. Operator
 - ii. Sigma factor
 - iii. Repressor
 - iv. Promoter
- c. In the process of DNA synthesis in E. coli, the RNA primers are excised by the exonuclease activity of
- i. DNA polymerase I
 - ii. DNA polymerase II
 - iii. DNA polymerase III
 - iv. DNA ligase
- d. Mode of DNA replication is
- i. Conservative and bidirectional
 - ii. Semiconservative and unidirectional
 - iii. Semiconservative and bidirectional
 - iv. Conservative and unidirectional
- e. Which enzyme is used in the unwinding of DNA?
- i. Ligase
 - ii. Topoisomerase
 - iii. Helicase
 - iv. Exonuclease

Q2. Write short notes on (any three)

3x5=15

- a.) Watson and Crick Model of DNA
- b.) Replication of telomeres
- c.) Semi-conservative replication
- d.) Rho independent termination

Q3. Briefly explain the mechanism of DNA replication in prokaryotes.

10

OR

What do you mean by promoter site? Explain the mechanism of transcription in prokaryotes with suitable diagram.

2+8=10

