

B.Sc Semester-IV (Hons) Examination (CBCS), 2022

Subject - Botany

Paper - CC-10

(Molecular Biology)

Time:2 Hours

Full Marks: 40

A. Answer **any five** questions from the following:

2x5=10

1. What do you mean by “Central dogma”?
2. What is ribozyme?
3. Mention the termination codons of protein synthesis in prokaryotes
4. What are “Okazaki fragments”?
5. Mention the function of sigma factor of prokaryotic RNA polymerase
6. What do you understand by semi-conservative replication of DNA?
7. Mention two functions of HSPs.
8. Define Facultative heterochromatin.

B. Answer **any two** questions from the following:

5x2=10

1. Comment on the inferences resulted from the experiments of Frederick Griffith, A. Hershey & M. Chase; Avery, MacLeod & McCarty and Fraenkel Conrat.
2. Differentiate between Rho-dependent and Rho-independent termination of transcription in prokaryotes
3. Write notes on constitutive heterochromatin and facultative heterochromatin
4. Write a brief note on “Cot curve”.

C. Answer **any two** questions from the following:

10x2=20

1. Mention briefly the mechanism of DNA replication of prokaryotes highlighting the enzymes involved in the process.
2. Comment on Woobler hypothesis. State the important properties of genetic code.
3. Highlight the salient features of double helix structure of DNA molecule as depicted by Watson and Crick. What is nucleosome?
4. Explain how the tRNA is aminoacylated during protein synthesis of prokaryotes?
Name two inhibitors of protein synthesis of prokaryotes.
