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21BSC4C4BTL

B.Sc. IV Semester Degree Examination, Sept./Oct. - 2024

BIOTECHNOLOGY

DSC4 : Molecular Biology

(NEP)

Time : 2 Hours Maximum Marks : 60

Note : *(i) Answer **all** Sections.*

(ii) Draw the labelled diagrams wherever necessary.

SECTION - A

Answer the following Sub-questions. Each Sub-question carries **one** mark. **10x1=10**

1. (a) What is Nucleotide ?

(b) What are Ribozymes ?

(c) What is the purpose of DNA ligase in replication ?

(d) Which direction does DNA replication occur ?

(e) Give an example of a genetic disorder that results from defective DNA repair.

(f) Expand BRCA.

(g) Define Poly A Tail.

(h) What is translation ?

(i) Define Exons.

(j) Name the terminator codons.

SECTION - B

Answer **any four** of the following questions. **4x5=20**

2. Explain Griffith experiment to prove DNA as genetic material.

3. Give a detailed account on the replication model.

4. What is the significance of the BRCA genes in DNA repair ?

5. Write a short notes on RNA polymerase in Prokaryotes.

P.T.O.

6. Describe the properties of Genetic code.

7. Explain briefly about the Gene Structure in Prokaryotes.

SECTION - C

Answer **any three** of the following questions. **3x10=30**

8. Write the detailed account of Watson and Crick Model of double stranded DNA.

9. Explain the significance of DNA replication in the context of biotechnology and genetic engineering.

10. Explore the relationship between DNA repair and aging, highlighting the impact of accumulated DNA damage on cellular functions.

11. Explain in detail about the mechanism of prokaryotic transcription with the schematic representation.

12. Explain the role of Start and Stop codons in translation and how they influence the beginning and ending of Protein Synthesis.

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