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4 SEM TDC BOTH (CBCS) C 8

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(May/June)

BOTANY

(Core)

Paper : C-8

(Molecular Biology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

1. Choose the correct answer of the following :

1×5=5

- (a) The site of protein synthesis is mitochondria / ribosome / chloroplast.**
- (b) The clover leaf model of tRNA was proposed by Erwin Chargaff / Robert Holley / Linus Pauling.**
- (c) RNA polymerase enzyme is necessary for transduction / termination / transcription.**

(2)

- (d) The two strands of DNA are held together by covalent bond / hydrogen bond / ionic bond.
- (e) The initiation codon is AUG / GGU / AAU.

2. Write briefly on the following (any three) :

4×3=12

- (a) Inhibition of protein synthesis
- (b) Important features of DNA as the genetic material.
- (c) Split genes
- (d) Transcription factors
- (e) Functions of DNA

3. Who coined the term nucleic acid and what are the types of nucleic acids? Discuss the structure of different types of RNA and their functions.

1+2+9=12

Or

Distinguish between the following :

6+6=12

- (a) Transcription and Translation
- (b) B-DNA and Z-DNA

(3)

4. Who proposed that DNA has a double-helical structure? Discuss with experimental evidence that "DNA replication is semi-conservative and bidirectional." 1+8+3=12

Or

Write explanatory notes on the following :

6+6=12

- (a) Chloroplast DNA
- (b) Fidelity of translation

5. What is genetic code? Discuss the characteristic features of genetic code. What are the types of codon? 1+8+3=12

Or

Write short notes on the following :

4×3=12

- (a) Charging of tRNA
- (b) Splicing pathway of group I
- (c) DNA organization in prokaryotes
