

(i) Printed Pages : 2

Roll No. ....

(ii) Questions : 9

Sub. Code :

1	3	8	4	2
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Exam. Code :

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**B.Sc.(Hons) Bio-Technology (FYUP) 3<sup>rd</sup> Semester  
(2125)**

**CELL AND MOLECULAR BIOLOGY**

**Paper : BTED302**

**Time Allowed : Three Hours]**

**[Maximum Marks : 68**

**Note :—** Attempt **FIVE** questions in all. Question No. **I** is compulsory and select **ONE** question from each Unit.

**I. Explain the following :**

- (a) Cell as a basic unit of life
- (b) Passive and active transport
- (c) Functions of ribosomes
- (d) Z-DNA
- (e) Amoeboid cell locomotion
- (f) Termination of replication in prokaryotes
- (g) Draw structure of Deoxyadenosine monophosphate
- (h) Termination of polypeptide synthesis. 1.5×8=12

**UNIT—I**

- II. (a) Discuss in detail the structure of a typical bacterial cell with a suitable diagram.**
- (b) Explain Singer and Nicolson Fluid Mosaic model of cell membrane.** 7+7=14

- III. (a) Describe in detail the structure of a typical plant cell with a suitable diagram.
- (b) What is Co-transport? Explain its types with one suitable example of each.  $7+7=14$

### UNIT—II

- IV. (a) Describe the fine structure of Mitochondria with a suitable diagram.
- (b) Discuss structure and functions of Golgi bodies.  $7+7=14$
- V. (a) Explain the ultra-structure of Nucleus and its different components.
- (b) Describe the structure and functions of prokaryotic ribosome.  $7+7=14$

### UNIT—III

- VI. (a) Give detailed account of Watson and Crick model of double stranded DNA.
- (b) Describe structure and functions of DNA polymerase III components.  $7+7=14$
- VII. (a) What is Telomerase? Explain mode of action of telomerase.
- (b) Explain initiation of DNA replication in prokaryotes with suitable diagram.  $7+7=14$

### UNIT—IV

- VIII. (a) Discuss characteristics of genetic code.
- (b) Describe aminoacylation of tRNA during polypeptide synthesis.  $7+7=14$
- IX. (a) What is Operon? Explain Tryptophan operon regulation.
- (b) Describe transcription initiation and elongation in prokaryotes.  $7+7=14$