



**KB-481**

Seat No. \_\_\_\_\_

**B. Sc. (Sem. V) Examination**

**October / November - 2017**

**CC-I-8 : Molecular Genetics**

Time : 3 Hours ]

[ Marks : 70

**1 MCQ and one word answer : 15**

- (1) The binding of the prokaryotic DNA dependent RNA polymerase to promoter site is inhibited by
- (a) Streptomycin            (b) Puromycin  
(c) Rifampicin            (d) Tetracycline
- (2) The tRNA anticodon for the DNA sequence AUC would be
- (a) UAG                      (b) AGU  
(c) TCA                      (d) AGT
- (3) A role of rRNA in protein synthesis is to
- (a) Form ribosomes  
(b) Form the protein's tertiary structure  
(c) carries appropriate amino acids into place.  
(d) carries genetic information out of the nucleus.
- (4) The molecule that is responsible for carrying amino acids to ribosomes is
- (a) DNA                      (b) tRNA  
(c) rRNA                      (d) mRNA.



- (11) Which of the following enzyme(s) can remove or insert supercoil twists into circular DNA?  
(a) Topoisomerases      (b) DNA Pol II  
(c) Spliceosomes      (d) Helicase
- (12) Gene is a segment of \_\_\_\_\_
- (13) Which scientist used the X ray Technology in DNA discovery and later on it was used in watson and Crick ?
- (14) Give the name of Enzyme which participating in RNA to DNA formation
- (15) Give the name of initiation codon in Mitochondria

2 Answer the following : (any five)

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- (1) Explain DNA structure with diagram
- (2) Explain the Telomere Replication
- (3) Explain the Positive and Negative Control of Gene
- (4) Give one role of each of the following in the production of a protein  
(a) tRNA  
(b) rRNA  
(c) mRNA
- (5) Write a note on RNA polymerase
- (6) Explain the subunits of DNA Polymerase in Eukaryotic cell
- (7) Give role of RNA polymerase in DNA replication.

3 Answer the following : (any three)

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- (1) Explain Replication in Ecoli.
  - (2) Explain Genetic Code with its importance
  - (3) Write a note on Translation in E. coli
  - (4) Write a note on Transposable element with its significance
  - (5) Do as Follows
    - (a) Give the location of the following processes in the cell:
      - (i) transcription 1
      - (ii) translation 1
    - (b) What is the role of rRNA in transcription? 4
    - (c) What is the role of promoter Region in gene control ? 4
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