



HB-003-001531

Seat No. _____

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

May / June - 2017

Biochemistry : Paper - 503

(Molecular Biology)

Faculty Code : 003

Subject Code : 001531

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Give answers in one sentence only : **20×1=20**

- (1) Which enzyme is involved in maturation of Okazaki fragments?
- (2) Name the site for initiation of replication in *E. coli*.
- (3) Which enzyme is known as reverse transcriptase ?
- (4) Give the full form of snRNPs.
- (5) What are introns?
- (6) Write the other name of type II terminators of transcription.
- (7) Give the function of Signal sequence.
- (8) Name the factor involved in events of protein termination in eukaryotes,
- (9) Give one basic difference between transcription and translation.
- (10) Write the use of Ames Test.
- (11) Define germ line mutation.
- (12) What is Silent mutation?
- (13) State the site at which viral DNA gets incorporated into bacterial genome.
- (14) State the year and name of the scientist who received noble prize for studies on transposons.
- (15) What is a Chimeric gene?

- (16) Name the two types of ends formed by action of restriction endonucleases.
- (17) Write the full form of YACs.
- (18) What is genomic "Library"?
- (19) Name the two primers used in PCR.
- (20) Give the fundamental difference between molecular cloning and polymerase chain reaction.

2 (A) Answer any **three** of the following questions : **2×3=6**

- (1) Write about the two types of exonucleases.
- (2) Define Gene expression.
- (3) Name the two inhibitors of translation.
- (4) What do you understand by Frame shift mutations?
- (5) What are restriction endonucleases?
- (6) Define Lagging strand,

(B) Answer any **three** of the following questions : **3×3=9**

- (1) Give the composition of prokaryotic ribosome.
- (2) Why it is not favorable to have DNA replication from 3'→5' direction?
- (3) List the characteristic features of Genetic code.
- (4) What is SOS response?
- (5) Briefly describe $F^+ X F^-$ mating.
- (6) List different types of sigma factor.

(C) Answer any **two** of the following questions : **5×2=10**

- (1) Describe the DNA replication initiation at oriC in E.coli.
- (2) Discuss in detail post - transcriptional modification of m RNA in eukaryotes.
- (3) With diagram, explain elongation phase in prokaryotic translation.
- (4) Write a detailed note on mutagens.
- (5) Write a short note on Types of Transposons in Prokaryotes

3 (A) Answer any three of the following questions : 2×3=6

- (1) What is the Driving force for DNA synthesis?
- (2) What do you understand by Promoters of E. coli genes?
- (3) State role of initiation factor in prokaryotic translation.
- (4) What is a repressible operon?
- (5) Give names of transposable elements found in drosophila.
- (6) Describe four arms of tRNA.

(B) Answer any three of the following questions : 3×3=9

- (1) How are the ends of chromosomes replicated?
- (2) Explain in detail about RNA polymerase III
- (3) With diagrams, explain charging of tRNA.
- (4) Give differences between transition and transversion.
- (5) Write in detail about the enzymes involved in recombinant DNA technology.
- (6) Give the role of Photolyase in DNA repair.

(C) Answer any two of the following questions : 5×2=10

- (1) Write about chain terminator method for DNA sequencing.
- (2) State different stages of transcription and explain in detail about termination.
- (3) Discuss various post-translational modifications.
- (4) Describe in detail repair involving excision of base pairs with well-labelled diagrams.
- (5) Discuss briefly the different cloning vectors used in rDNA technology.