

SARDAR PATEL UNIVERSITY

B.Sc Examination, Fifth Semester  
Monday, 09th May, 2016

Time: 10:30AM to 1:30 PM

Biotechnology

US05CBIT-01

(Molecular Biology)

Total Marks: 70

Multiple Choice Question(attempt all)

10

Q-1

1. DNA polymerase responsible for leading strand synthesis
  - a) Pol  $\beta$
  - b) Pol  $\alpha$
  - c) Pol  $\epsilon$
  - d) All of the above
2. A promoter of a typical eukaryotic gene is composed of
  - a) A binding site for TATA binding protein
  - b) a binding site for the sigma factor
  - c) a binding site for Transcription factor IID
  - d) a binding site for Transcription factor IIB
3. Movement of ribosome from one codon to another is know as?
  - a) Transformation
  - b) Translocation
  - c) Transition
  - d) Transversion
4. Following is not the example of transposon?
  - a) Col element
  - b) P element
  - c) Copia
  - d) Tn10
5. \_\_\_\_\_ element misses the transposases enzyme lacking transfer by itself.
  - a) Activator element
  - b) Insertion element
  - c) Dissociation element
  - d) None
6. Which of the following processes is involved in DNA repair?
  - a) Transposition
  - b) Conjugation
  - c) Reversion mutation
  - d) Homologous recombination
7. Post-transcriptional modification of prokaryote RNA molecules includes
  - P. cleavage of primary transcripts to form functional molecules of rRNA and tRNA
  - Q. addition of a CCA 3' terminus to all tRNA molecules
  - R. methylation of bases using S-adenosyl-methionine as methyl donor
  - S. addition of a cap structure to the 5' end of mRNAs
  - a) P, Q
  - b) P,R
  - c) P,S
  - d) P,Q,R,S
8. Which molecules stabilize and prevent the incorrect folding of synthesised

- protein by its binding?
- a) Protease  
b) Peptidase  
c) Chaparone  
d) All of the above
9. The end of chromosome can be lengthen by:  
a) Apoptosis  
b) Telomerase  
c) Reverse transcriptase  
d) Telomerase
10. An autonomous element that can move itself within cell but not between cell is a ?  
a) Plasmid  
b) Hfr strain  
c) Transducing phage  
d) Transposable element

**Q-2 Short Question(attempt any ten)**

**20**

1. What is polymerase shifting?
2. Give various function of Enhancer.
3. What is charging of t-RNA?
4. What do you mean by non-autonomous element?
5. Give a brief concept on Recombinational repair.
6. Describe the importance of target site in transposition.
7. Define: RNA processing
8. Give a brief account to Eukaryotic Ribosome.
9. what do you understand by shortening of chromosome?
10. What is SRP? Give its function
11. IS element are also called Inverted terminal repeats. Comment.
12. Define: 5' Capping

- Q-3 A. Describe the process of initiation of replication with its regulation** **06**  
**B. Give an account on Mismatch repair.** **04**

**OR**

- Q-3 A. Give comparative account on proteins and enzymes involved in prokaryotic & eukaryotic replication.** **05**  
**B. Write a note on SOS repair.** **05**

- Q-4 A. Explain transcriptional process of elongation and termination.** **06**  
**B. Enlist functions of general transcriptional factors.** **04**

**OR**

- A. Explain the processing of r-RNA and t-RNA** **05**  
**B. Describe the process of initiation of transcription.** **05**

- Q-5 A. Discuss the elongation step of protein synthesis in Eukaryotes** **05**  
**B. Explain targeting of protein synthesized on ribosome bound organalles** **05**

**OR**

- Q-5 A. Give an account on Post translational modification occurring in eukaryotic protein** **06**  
**B. Describe how polypeptide release is catalyzed by two release factors** **04**

- Q-6 A. Give a detail account on retrotransposon.** **10**

**OR**

- Q-6 A. Give a descriptive account on bacterial transposons** **10**

All the Best

— X —  
 (2)