**Question Bank-4**

**Course- B.Sc. Biotechnology 6th Semester, B.Sc. CBZ 6th Semester, B.Sc. Biotechnology (H) 4th Semester & B.Sc. Botany (H) 4th Semester**

**Subject: Molecular Biology; Topic: Protein Synthesis**

1. **Multiple Choice Questions:**
2. tRNA has peptidal transferase activity.  
   a) True  
   b) False
3. Name the sequence of RNA, which is recognized by a small subunit of the ribosome.  
   a) Rho utilization site  
   b) Downstream sequence  
   c) Upstream sequence  
   d) Shine Dalgarno sequence
4. Which of the following recognize a specific amino acid and its cognate t-RNA molecule?  
   a) t-RNA synthetase  
   b) Ribososme  
   c) r-RNA  
   d) Topoisomerase
5. Name the inhibitor which blocks translation in both prokaryotes as well as eukaryotes?  
   a) Chlorophenicol  
   b) Tetracycline  
   c) Puromycin  
   d) Streptomycin
6. Which of the following is not involved in the post transcriptional processing of t-RNA?  
   a) Base modulation  
   b) Attachment of CCA arm  
   c) Splicing  
   d) Attachment of poly-A tail
7. Which is the third elongation step in bacteria?  
   a) Peptide bond formation  
   b) Binding of an incoming aminoacyl t-RNA  
   c) Translocation  
   d) None
8. The preinitiation complex in prokaryotes include
9. Intiation factors, mRNA, 30 S subunit, GTP
10. Intiation factors, mRNA, 30 S subunit, 50 S subunit, ATP
11. Intiation factors, mRNA, 50 S subunit, GTP
12. Intiation factors, 30 S subunit, 50 S subunit, ATP
13. Translocation in protein synthesis begins with the
14. movement of dipeptidyl tRNA from A-site to P-site
15. movement of tRNA from A-site to P-site
16. movement of tRNA from P-site to A-site
17. movement of tRNA from P-site to E-site
18. Which of the statement is correct
19. Activated amino acid binds to 5’ end of respective tRNA molecule.  
    b) Termination codon has no tRNA  
    c) CTP is required for the tRNA activation  
    d) there is only on amino acyl-tRNA synthatase enzyme in a cell
20. Name the scientist who coined the term “Shine- dalgarno Sequence”.
21. **Short Questions**
22. Discuss the significance of Shine-dalgarno sequence.
23. Discuss the formation of pre initiation complex in translation.
24. Discuss the role of initiation factors in translation.
25. Differentiate between co-translational and post translational transport of proteins.
26. Why GTP is called the molecular switch?
27. Discuss the role of GTP in translation.
28. Discuss the aminoacylation of tRNA.
29. Discuss the formylation of methionine.
30. Discuss the role of elongation factors in translation.
31. Discuss the role of release factors in translation.
32. Long Questions
33. Discuss the formation of pre-initiation complex in eukaryotes
34. Discuss the types and functions of eukaryotic initiation factors.
35. Discuss the mechanism of protein synthesis in prokaryotes.