Seat No. : _____

NC-111

November-2021

B.Sc., Sem.-V

CC-302 : Biochemistry (Molecular Biology)

Time : 2 Hours] **[Max. Marks : 50**

Answer any **three** from the following :

1. (A) Explain Watson and Crick model of DNA. **7**
   (B) Discuss the experiment of Avery, MacLeod and McCarty. **7**

2. (A) Explain : Thermal denaturation of DNA. **7**
   (B) Discuss : Structure and function of E.coli RNA polymerase. **7**

3. (A) Write a note on characteristics of genetic code. **8**
   (B) Explain Termination of prokaryotic translation. **6**

4. (A) Explain regulation of gene expression with suitable example. **8**
   (B) Discuss : Activation step in prokaryotic translation. **6**

5. (A) Explain : Cut and Paste Transposones. **6**
   (B) Discuss : Excision repair mechanism of DNA. **8**

6. (A) Explain effect of ionizing radiation on DNA. **6**
   (B) Discuss : HNO_2 and 5 BU as chemical mutagenic agent. **8**

7. (A) List important properties of an ideal vector. **7**
   (B) Write a note on transformation procedure of bacterial cells for gene cloning. **7**

8. (A) Discuss : Southern blotting technique. **7**
   (B) Write a note on Lambda(λ) phage as a cloning vector. **7**

9. Answer the followings : (any **eight**) **8**

(1) Define : Hyperchromacity

(2) What is the role of ssb in replication ?

(3) What is Tm ?

(4) What is the role of topoisomerase ?

(5) Name the scientists who proved that replication is semiconservative.

(6) Define : Transcription

(7) What are intervening squences ?

(8) Who discovered Mobile Genetic Elements

(9) Where the promoter is located in E.Coli ?

(10) Who proposed the wobble hypothesis ?

(11) Give two examples of inhibitors of prokaryotic translation.

(12) What is the role of photolyase ?

(13) How do you check purity of DNA in spectrophotometer ?

(14) What is a gene library ?

(15) What are restriction endonucleases ?

(16) Explain nomenclature of pUC8.
