

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 :  $\text{HNO}_2$  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( $\lambda$ ) phage as a cloning vector. 7



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

- (1) Define : Hyperchromacity
  - (2) What is the role of ssb in replication ?
  - (3) What is  $T_m$  ?
  - (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.
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