

Seat No. : \_\_\_\_\_

**NC-104**

**December-2015**

**B.Sc., Sem.-V**

**Core Course-302 : Biochemistry**

**Time : 3 Hours]**

**[Max. Marks : 70**

- Instructions :** (1) All questions carry equal marks.  
(2) Draw diagram wherever it is required.

1. (a) Discuss the experiment of Hershey & Chase. What is its importance in molecular biology ? **8**  
(b) Write a note on DNA super coiling & state its biological importance. **6**  
**OR**  
(a) What is the role of DNA pol I and DNA pol III in replication ? **8**  
(b) Discuss: Rolling circle model of DNA replication. **6**
2. (a) Discuss : 5BU & Ionizing radiation as mutagenic agents. **8**  
(b) Explain excision repair mechanism of DNA. **6**  
**OR**  
(a) Discuss: Initiation & elongation steps of Transcription. **8**  
(b) State six characteristics of Genetic Code. **6**
3. (a) What is Translation? Explain elongation step of this process. **8**  
(b) Discuss how termination of translation occurs. **6**  
**OR**  
(a) Explain regulation of gene expression with a suitable example. **7**  
(b) Write a note on post Translational modifications. **7**
4. (a) Discuss steps in gene cloning. **5**  
(b) Discuss in detail the steps used in isolation & estimation of DNA. **9**  
**OR**  
Write a note on followings : (any two) **14**  
(A) Restriction endonucleases.  
(B) Vectors.  
(C) Applications of Genetic engineering

5. Answer in brief : **14**
- (1) Name various forms of DNA. Which form occurs naturally in biological Systems ? **2**
  - (2) Define: Hyperchromicity & T<sub>m</sub>. **2**
  - (3) What is wobble hypothesis ? **2**
  - (4) Define with example: 1. Inducer. 2. Repressor. **2**
  - (5) Name the Initiation & Termination codons. **2**
  - (6) What is Southern blotting & Western blotting techniques ? **2**
  - (7) Name the tracker dye & detecting dye used in agarose gel electrophoresis of DNA. **2**
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