



**NCE-1603120102020600** Seat No. \_\_\_\_\_

**M. Sc. (Sem. II) (CBCS) (External) Examination**

**April / May - 2017**

**Biochemistry : CBC-6**

*(Molecular Biology)*

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**1** Answer the following : (any **seven** out of ten) **7×2=14**

- (a) Write a note on DNA Topoisomerase.
- (b) Write a note on Nucleosome.
- (c) Write a note on Replisome.
- (d) DNA dependent RNA Polymerase.
- (e) C value paradox.
- (f) Difference between codons and Amino acids.
- (g) What is phagemid ?
- (h) What do you mean by PCR ?
- (i) Difference between Probes and Primers?
- (j) Difference between SNP and Mutation.

**2** Answer the following : (any two out of three) **2×7=14**

- (a) Explain various types of DNA polymerases in Prokaryotes and Eukaryotes.
- (b) List various major proteins and enzymes required for DNA replication along with their functions.
- (c) Write a detailed note on LAC operon.

**3** Answer the following : **2×7=14**

- (a) Write a detailed note on Post Transcriptional modifications.
- (b) Write a detailed note on clover leaf structure of tRNA with diagram.

**OR**

- 3** Answer the following : **2×7=14**
- (a) Write a detailed note on "Bacteriophage as Vector".
  - (b) Enlist the names of first generation DNA sequencing methods. Discuss Pyrosequencing method in detail.
- 4** Answer the following : **2×7=14**
- (a) What do you mean by PCR-RFLP ? Describe in brief, how it is useful in paternity and forensic cases ?
  - (b) What do you mean by Real Time PCR ? Discuss non-specific Real Time PCR in detail.
- 5** Answer the following : (any **two** out of four) **2×7=14**
- (a) Give details about differences between genomic organizations in Prokaryotes and Eukaryotes.
  - (b) Discuss the structure of Ribosome with diagram.
  - (c) Write a brief note on Western blotting technique.
  - (d) Write a detailed note on RAPD. What is the main difference between RAPID and SCAR?
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