

**2016**

*Time : 2 hours*

*Full Marks : 40*

*The questions are of equal value.*

*Answer any **four** questions.*

**(MOLECULAR BIOLOGY)**

1. Write short notes on the following :
  - (a) C-value paradox
  - (b) Determination of  $T_m$  value
2. What is homologous recombination ? Discuss the role of enzymes participating in the recombination process.
3. Describe how DNA was determined as genetic material. Give an account of differences in prokaryotic and eukaryotic replication.

4. Give an account of post-transcriptional modification in eukaryotic cell.
5. Write short notes on the following :
  - (a) rho factor
  - (b) Poly – A tail
6. What is Operon Concept ? Give an account of lac operon in prokaryotes.
7. Describe the molecular mechanism of anti-sense RNA. Write its application.
8. Write short notes on the following :
  - (a) Landmarks in DNA sequencing
  - (b) Ribozyme

