

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Summer 2017-18 Examination**

**Semester: 2**  
**Subject Code: 11202151**  
**Subject Name: Molecular Biology of the Genes**

**Date: 09/05/2018**  
**Time: 10:30 AM to 01:00 PM**  
**Total Marks: 60**

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**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type** (08)  
Discuss role of enzymes involved DNA replication.
- Q.1. B) Answer the following questions (Any two)**
- (a) Brief note (Each of 02 marks) (04)
1. Define split genes.
  2. Define nested genes.
- (b) Short note on Packing of DNA in to eukaryotic chromatin. (04)
- (c) Short note on DNA repair mechanism. (04)
- Q.2. A) Answer the following questions.**
- (a) Explain the transcription in prokaryotes (04)
- (b) Short note RNA i. (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Short note on small RNAs. (03)
- (b) Short note on zinc finger motif. (03)
- (c) Short note on leucine zipper. (03)
- Q.3. A) Essay type** (08)  
Explain post translational modifications.
- Q.3. B) Answer the following questions (Any two)**
- (a) Brief note (2x2M) (04)
1. Define Leader sequences.
  2. Define Promoter genes.
- (b) Short note on properties of the genetic code. (04)
- (c) Explain role of Ribosome as a translation factory. (04)
- Q.4. A) Answer the following questions.**
- (a) Short note DNA methylation. (04)
- (b) Short note environmental regulation of gene expression. (04)
- Q.4. B) Answer the following questions (Any two)**
- (a) Short note protei targeting. (03)
- (b) Short note on negative control of lac operon. (03)
- (c) Short note on attenuation in trp operon. (03)