

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
B.Sc. Summer 2018 Examination

Semester: 4
Subject Code: 11102258
Subject Name: Molecular Biology- II

Date: 12/05/2018
Time: 10.30 am to 1.00 pm
Total Marks: 60

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)**
 Describe in detail the transcriptional control of Lac operon. Mention about its functioning during Glucose availability?
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) Brief note (2x2) (04)
1. Cryptanalysis
 2. Codon Degeneracy
- (b) Short note on Universal Nature of Genetic code (04)
- (c) Short note on Central Dogma and Reverse Central Dogma (04)
- Q.2. A) Answer the following questions. (04)**
- (a) Fill in the blanks. (Each of 02 marks) (04)
1. Wobble hypothesis states that.....
 2. and are inhibitor antibiotics of translation
- (b) Short note on PTMs (Post translational Modifications) (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) Multiple choice questions. (Each of 01 marks) (03)
1. Translation means:

A.) mRNA---→Polypeptide	B.) DNA--→mRNA
C.) RNA----→ DNA	D.) None of the above
 2. During initiation of translation which site is empty?

A.) P	B.) A
C.) E	D.) Both P and E
 3. The concept of operon was given by

A.) Singer and Nicolson	B.) Watson and Francis Crick
C.) Jacob and Monod.	D.) None of the above
- (b) Short note on Transmission Electron microscopy (03)
- (c) Short note Lytic Cycle of Viral Replication. (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 Explain the stages of translation in prokaryotes with appropriate diagrams
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) Brief note (2x2) (04)
1. Ubiquitination
 2. Enhancers and Silencers
- (b) Short note on Attenuation Control of Trp Operon (04)
- (c) Short note on Southern Blotting (04)
- Q.4. A) Answer the following questions. (04)**
- (a) Fill in the blanks. (Each of 02 marks) (04)
- 1..... and are basic requirements of Sanger sequencing method
 - 2.Lac operon is.....whereas trp operon is.....(repressible/inducible)
- (b) Describe construction, principle and functioning of Fluorescence Microscopy (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) Do as directed: (03)
- 1.....andare nonsense codons
 2. Expand PCR.
 3. There are.....codons for 20 amino acids
- (b)Short note on Northern Blotting (03)
- (c) Mention two applications of Microarray (03)