Printed Pages: 01 **Sub Code: BT406/EBT403**

Paper Id: 154406 **Roll No.** [redacted]

B. TECH
(SEM IV) THEORY EXAMINATION 2017-18
GENETICS & MOLECULAR BIOLOGY

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief **2 x10 = 20**

a. Explain the assortment of genes.
b. What is ORF?
c. What are Okazaki fragments?
d. Define introns and exons.
e. Give the properties of triplet codon.
f. Summarize the central dogma of molecular biology.
g. Give the structural features of t-RNA.
h. What are transcription factors?
i. What is palindromic sequence?
j. Explain dominant epistasis.

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a. How packaging of DNA is done in the form of chromosome?
b. What are anticodons? How do they contribute to the expression of gene?
c. Describe the general structure of eukaryotic m RNA. Mention the advantage of ORF.
d. Describe the principle and advantages of semi conservative replication.
e. What are cistrons? Explain the experiment which led to this concept.

SECTION C

3. Attempt any *one* part of the following: **10 x 1=10**

a. Write a note on DNA damage repair in cell. Describe photo reactivation.
b. What do you understand by open promoter complex? Describe its importance.

4. Attempt any *one* part of the following: **10 x 1=10**

a. Describe the process of translation in eukaryotes? How does it differ from prokaryotes?
b. What is wobble hypothesis? What does it contribute to understand gene expression?

5. Attempt any *one* part of the following: **10 x 1=10**

a. What are the difference between transition and transversion mutation? Mention their advantages.
b. What are post transcriptional modifications?

6. Attempt any *one* part of the following: **10 x 1=10**

a. Give a detailed note on genetic disorders.
b. What are the common types of DNA damages? Explain in detail.

7. Attempt any *one* part of the following: **10 x 1=10**

a. Explain hormonal control of gene expression in eukaryotes
b. Explain linkage and crossing over. Why is it important?