

Printed Pages: 01 Sub Code: BT406/EBT403

Paper Id: 154406

Roll No.

# 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

 $2 \times 10 = 20$ 

- 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:

 $10 \times 3 = 30$ 

- 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:

 $10 \times 1 = 10$ 

- 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:

 $10 \times 1 = 10$ 

- 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:

 $10 \times 1 = 10$ 

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