

(Following Paper ID and Roll No. to be filled in your Answer Books)

PAPER ID :

Roll No.

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B.TECH.

Theory Examination (Semester-IV) 2015-16

GENETICS & MOLECULAR BIOLOGY

Time : 3 Hours

Max. Marks : 100

SECTION-A

Q.1. Attempt all Parts. Write answer of each section in short.

(10×2=20)

- (a) Write the difference between gene and chromosome?
- (b) What is the termination codon in translation process?
- (c) Explain the law of genetics.
- (d) What do you mean by genetic inheritance?
- (e) Explain genetics code.
- (f) Write down the role of sigma factor in transcription.
- (g) What are Multiple alleles?
- (h) What do you mean by linkage?
- (i) What are DNA Polymerases?
- (j) What is split gene?

SECTION-B

Q.2 Attempt **any five parts** from this section. All parts carry equal marks.

(5×10=50)

- a) What is the difference between the nucleotide and nucleoside?
- b) Explain mutation deletion techniques and its applications.
- c) Write down Hardy-Weinberg principal. Explain quantitative genetic inheritance.
- d) Write short notes on RNA splicing and m-RNA processing.
- e) What do you mean by transposable element and transposition?
- f) Explain central dogma of life.
- g) Discuss the experimental proofs which explain that DNA is genetic material.
- h) Explain crossing over.

SECTION-C

Attempt **any two Parts** from this section.

(2×15=30)

Q.3. Discuss about the Classification and types of Mutation.

Q.4. Explain DNA replication in prokaryotes and eukaryotes.

Q.5. (a) Discuss operon structure and its positive and negative control.

(b) Briefly explain ~~the~~ operon of *E. coli*.

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