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

Paper ID : 2012345 Roll No. | | | | | | | | | |

B.TECH.

Regular Theory Examination (Odd Sem - III),2016-17

GENETICS AND MOLECULAR BIOLOGY

Time : 3 Hours *Max. Marks : 100*

Section - A

1. Attempt all the questions with Answer in 50-75 words. (10×2=20)

a) What is the role of Sugar puckering in DNA structure?

b) Mention any four main differences between prokaryotic and eukaryotic Translation.

c) Name different enzymes involved in replication of DNA.

d) Differentiate between leading strand and lagging strand.

e) What is the function of tRNA?

f) Differentiate between translation and transcription.

g) Are genetic codes universal?

h) Distinguish between 'σ' and 'θ' model of DNA Replication.

i) Name any four proteins involved in the DNA replication in eukaryotes.

j) What is DNA super coiling? Why is it useful to bacteria?

Section - B

Attempt any three questions with Answer in 100-200 words. (3×10=30)

1. What do you mean by 'Semi conservative mode of replication'?

2. What are Zinc Finger and Leucine Zipper?

3. Explain Wobble hypothesis. How it contributes for the degeneracy of genetic code?

4. Name Inhibitors fo translation and its modes of action

5. How Arabinose Operon is different from other operones?

Section - C

Attempt any five questions with answer in 300-500 words. (5×10=50)

1. Write notes on Structural Polymorphism in DNA. How will you convert B-DNA into other DNA forms?

2. Briefly describe the process of DNA Replication in E.coli.

3. Explain the process of Translation in prokaryotes. State any four differences from eukaryotic translation.

4. Briefly describe the process of regulation of gene expression in Lac Operon.

5. Explain Reverse transcription. What are the different activities shown by Reverse Transcriptase enzyme?

OR

What is Sex Linked Inheritance? Illustrate sex linked inheritance with a suitable example.