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

Paper ID : 2289549 Roll No. | | | | | | | | | | |

B.TECH.

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

STRUCTURAL BIOLOGY

Time : 3 Hours *Max. Marks : 100*

Section - A

Attempt **all questions.** All questions carriers equal marks.

Write answer of each section in short. **(10×2=20)**

1. Define the following terms :-

a) Nuclear Overhauser Enhancement(NOEs) and Nuclear Organizing Regions(NOR)

b) Intragenic Spacer(IGS)

c) SnRNA

d) Protein Nucleic acid interactions

e) Base stacking

f) Cryptic genes

g) Transcription slippage

h) Supramolecular interactions

2. Why are Mitochondrial genomes much larger in plants?

3. Give comparison of initiation of DNA replication with transcription initiation.

Section - B

Attempt any three questions from this section.

(3×10=30)

1. Define any two terms :-

   a) Supramolecular assemblies

   b) Rotational isomers

   c) Hyperchromicity

2. Explain structural and conformational properties of cell membranes.

3. Describe the nucleosome model and packaging of DNA molecule in reference to chromatin fibres.

4. "Protein, the most ubiquitous macromolecular class." Describe in detail its folding pattern and structural dynamics in reference to Ramachandran plot.

5. List down the several techniques for atomic resolution or for the determination of 3D structures of Biomolecules.

Section - C

Answer all questions from this section **(5×10=50)**

1. What are Ribosomes? Describe different forms of RNA molecules with their functions. What are post translational modification system?

2. Discuss working principle and working of the NMR spectroscopy and X-Ray Crystallography.

3. What are Macromolecules, describe different types found in living things with their relative function towards the body?

4. Give the chemical composition and organization of ribosomes.

5. a) What are the various techniques opted for detecting repetitive DNA?

b) What are Biomolecules? Describe the covalent and weak non-covalent bonds in them.