Code No: RR422304 **Set No.1**

IV B.Tech. II Semester Regular Examinations, April/May -2006
BIOPHYSICS OF MACROMOLECULES
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are the different central questions in biophysics. [16]
2. Explain how potential energy is calculated. [16]
3. Write short notes on:
   (a) Protein structure
   (b) Nucleic acid structure. [8x2=16]
4. What are the general characteristics of nucleic acid structure. [16]
5. Describe the glycosidic bond rotational isomers. [16]
6. What are unimolecular and biomolecular multiple intermediates. [16]
7. What are the methods of direct visualisation of macromolecules. [16]
8. Write short notes on:
   (a) Electron microscopy
   (b) X-ray crystallography. [8x2=16]

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Code No: RR422304 **Set No.2**

IV B.Tech. II Semester Regular Examinations, April/May -2006
BIOPHYSICS OF MACROMOLECULES
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write short notes
   (a) Biological macromolecules
   (b) Strategies in biophysics. [8x2=16]
2. Discuss in detail about hydrophobic interactions and water structures. [16]
3. Write short notes on:
   (a) Ionic interactions
   (b) Disulphide bonds. [8x2=16]
4. Discuss in detail about the tertiary structures of nucleic acids. [16]
5. Discuss in detail about the backbone rotational isomers. [16]
6. Explain catalytic relaxation spectrometry. [16]
7. Discuss in detail about macromolecular diffusion. [16]
8. Write short notes on:
   (a) X-ray fibre diffraction electron microscopy.
   (b) Hydrodynamic particles. [8x2=16]

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Code No: RR422304 **Set No.3**

IV B.Tech. II Semester Regular Examinations, April/May -2006
BIOPHYSICS OF MACROMOLECULES
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Describe the basic strategies in biophyscis. [16]
2. Discuss in detail about rotation angles. [16]
3. Write short notes on:
   (a) Hydrogen bonding
   (b) Geometrics. [8x2=16]
4. Discuss in detail about ribose puckering forces. [16]
5. Write short notes on:
   (a) Base paining
   (b) Base stacking. [8x2=16]
6. Explain in detail about steady state kinetics. [16]
7. Discuss in detail about macromolecules as hydrodynamic particles. [16]
8. Write short notes on:
   (a) Ultra centrifugation
   (b) Neutron scattering. [8x2=16]

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Code No: RR422304 **Set No.4**

IV B.Tech. II Semester Regular Examinations, April/May -2006
BIOPHYSICS OF MACROMOLECULES
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Discuss in detail about the levels of structures in biological macromolecules. [16]
2. What are the different forces that determine the structure of protein and nucleic acid. [16]
3. Discuss in detail about polypeptide chains. [16]
4. How could you predict the structure of protein and nucleic acids. [16]
5. Write short notes on
   (a) Geometrics
   (b) Puckering Forces. [8x2=16]
6. Discuss about the biochemical kinetics studies. [16]
7. Discuss in detail about neutron scattering. [16]
8. Write short notes on:
   (a) Viscometry
   (b) Light scattering. [8x2=16]

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