

**B.Tech. - VIEP - ELECTRONICS AND  
COMMUNICATION ENGINEERING  
(BTECVI)**

**Term-End Examination**

**December, 2015**

**BIELE-017 : BIO-INFORMATICS**

*Time : 3 hours*

*Maximum Marks : 70*

---

**Note :** *Attempt any seven questions. All questions carry equal marks. Missing data, if any, may be suitably assumed.*

---

---

1. Explain the procedure for creating Biological Databases in Bio-Informatics. List some of their advantages and disadvantages. 6+4=10
  
2. Explain in brief, the significance of the following terms as applied to the field of Bio-Informatics : 5+5=10
  - (a) Kinemages for biological structure
  - (b) Dynamic Programming Sequence Alignment
  
3. Discuss various types of RNA secondary structures. Also list some of their important features which makes them useful in Bio-Informatics. 10

4. What are the different ways of applying vector machines in Bio-Informatics ? Explain. 10
5. Differentiate between Algorithms and Databases. Also list their advantages and disadvantages. 10
6. Explain the procedure for applying MUSTA algorithm for geometric hashing and multiple alignment. 10
7. Explain the following :  $2 \times 5 = 10$
- (a) Hidden Markov Models
  - (b) Gene Finding Algorithms
8. What are the differences between 1D Motifs and 3D Motifs ? Which is more advantageous and why ? Explain in brief.  $4 + 6 = 10$
9. Compare Genomics algorithms and Phylogenetic algorithms. Enlist their advantages and disadvantages. 10
10. Write short notes on any *two* of the following :  $2 \times 5 = 10$
- (a) Genetic Networks
  - (b) NMR
  - (c) Final Thoughts
  - (d) Structural Genomics
-