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B.Tech. (BT) (2012 to 2017) (Sem.-6)

Subject Code : BTBT-604

M.Code : 71075

Max. Marks : 60

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. Discuss genetic pathways.
- b. Explain catabolic and anabolic reactions with example.
- c. Write a short note on file formats.
- d. Name two databases used for drug designing.
- e. Mention importance of gene prediction.
- f. What is gene mapping?
- g. Explain neural networks.
- h. Discuss Perl programming language.
- i. Define Gene Physical Maps.
- j. Explain molecular docking of protein and ligand molecules.

SECTION-B

2. Define Systems Biology. Why do we need to study systems biology?
3. Name a gene prediction tool and also explain the algorithm used.
4. Why is gene prediction important?
5. Explain different steps of computer aided drug design. Also discuss the ADME properties of the drug molecules.
6. Name and discuss major types of RNA secondary structures?

SECTION-C

7. What is machine learning? Give example of machine learning approaches used in study of biological systems.
8. What are unusual DNA structures? Discuss the significance of these structures in relationship with the evolution of DNA structures.
9. Mention the role of computational biology with examples in the context of present scientific researches.

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.