

Paper code - U239-145 (T1)

**OCTOBER 2019/ INSEM (T1)**  
**S. Y. B.TECH. (INFORMATION TECHNOLOGY) (SEMESTER - III)**  
**COURSE NAME: FUNDAMENTALS OF DATA STRUCTURES**  
**COURSE CODE: ITUA21185**  
**(PATTERN 2018)**  
**MARKING SCHEME**

Q 1)

- a)
  - 1. pseudo C routine for concatenation: 3M, Example: 1M
  - 2. advantages of pointers (Any 3): 3M, Example: 1M
- b)
  - 1. C program to copy contents of file: 4M
  - 2. function pointer explanation: 3M, example: 1M

Q 2)

- a)
  - 1. ADT Definition: 1M uses: 1M, ADT for a Matrix: 2M
  - 2. Stepwise frequency count: 3M time complexity: 1M
- b)
  - 1. Big-oh notation Definition: 1.5 M, Graph: 1.5M, Example: 1M
  - 2. Differentiation (Min 2 points)
    - i) Static and dynamic data structures: 2M
    - ii) Linear and non-linear data structures: 2M

Q 3)

- a) pseudo-C code for Binary Search: 3M time complexity with explanation: 1M
- b) Pass-wise insertion sort: 4M