3E2073

B. Tech. (Sem. III) (Main/Back) Examination, January - 2012
Computer Engg. & Information Tech.
3IT3 & 3CS3 Data Structures & Algorithms

Time : **3** Hours]

[Total Marks : **80**
[Min. Passing Marks : **24**

Instructions to Candidates :

Attempt any five questions selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)
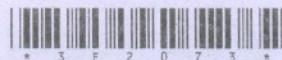
1._____Nil_____   2._____Nil_____

UNIT – I

1 (a) Why space and time complexity must be considered while writing a code ?

   (b) What will be the complexity for the expression $\sum\limits_{Koi}^{n} 0(n)$ where $0(n)$ stands for order n ?

   (c) Differentiate between raw major and column major form of arrays.

   6+5+5

OR

1 (a) Out of the sorting techniques studied, which sorting techniques are $0\left(n^2\right)$ and which are $0\left(n \log \dfrac{n}{2}\right)$?

   (b) What do you mean by base address in an array ? How it is used in calculating the address of elements in 2D array ?

   (c) Write a short note on "Asymptotic Notation".

   5+6+5