210

Form No. Ex- 8

Particulars about the candidate and the subject are **checked thoroughly** and corrected where necessary.

Sl. No.....

CENTRE CODE :.....

Invigilator

Signature of Officer-in-Charge

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

BCA 2nd Sem. Examination, 2014

Data Structure through 'C' Paper-07

(Theory)

Time : 2 Hrs. Full Marks : 50

Enrolment Number

Medium of Answer :

Que. No.	Marks
Total	

271(Theory)

INSTRUCTIONS TO CANDIDATES

1. This booklet contains.....16.. Pages numbering....15...Please verify number of pages in the booklet before answering.
2. An Examinee is allowed to bring only Admission Card and Identity Card to the Examination Hall. Any Examinee found in possession of loose papers, books etc. is liable to be Expelled.
3. Enrolment No. and Medium of answer must be written legibly at the specified places. Examinee's name and any other identifying mark which reveals examinees identity shall not be written anywhere in the script.
4. For Making calculations, only the last page provided for rough work shall be used.
5. No pages of the script be torn out .
6. Calculators will not be allowed for making calculations in the examination hall. ***MOBILE PHONES are strictly prohibited in the examination Centre.***
7. No candidate will be allowed to leave or go out of the hall during the First hour of the Examination.
8. A candidate having completed his/her answer, the script must be handed over, to an invigilator before leaving the hall.
9. Contravention of any of the instructions mentioned above shall render a candidate liable for disciplinary action as per regulations of the University.

Examiner's Signature : _____

Examiner's Full Name : _____

Scrutiniser's Signature : _____

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Head Examiner's Signature : _____

1. Answer any six questions from the following: $1 \times 6 = 6$
   (a) What do you mean by data and information?
   (b) What is a self referential structure?
   (c) What are the criteria on which the efficiency of algorithm depends on?
   (d) What do you mean by stack overflow?
   (e) What do you mean by traversing a linked list?
   (f) What is a tree?
   (g) What is a Eular Graph?

2. Answer any six questions from the following: 2×6 = 12

(a) What do you mean by abstract data type?

(b) What is a linked list?

(c) What do you mean by PUSH and POP operation in relation with stack?

(d) What are the advantages of sequential search technique?

(e) What is the basic technique involved in Bubble Sorting?

(f) What is the prefix nolation for representation of A+B–C?

(g) What is a directed graph?

3. Answer any three questions from the following: $4 \times 3 = 12$

(a) What are the best case, worst case and average case of algorithm?

(b) What do you mean by dynamic memory allocation? What are the functions used for allocating and deallocating meamory? Give the meaning of those functions.

(c) What type of data structure is used in Queue? Write an algorithm for inserting an element in a queue implemented as array.

(d) What are the different types of Linked List? Mention the advantages of linked list over array.

(e) What are the properties of a B-Tree?

4. Answer any two questions from the following: 5×2 = 10

(a) Write a brief note on static and dynamic implementation of stack.

(b) How are binary tree represented? Construct binary trees for the following data:

Pre order :	12	5	3	6	8	18	15	19
Post order :	3	8	6	5	15	19	18	12

(c) Write an algorithm for binary search. What is the worst case time complexity of binary search?

5. Answer any one questions from the following $10 \times 1 = 10$

(a) Describe the procedure for insenting node in a single linked list.

(b) When is insertion sort a good choice for sorting an array? Show all the passes using the Insertion Sorting Technique with the following list:

11, 22, 37, 67, 13, 23, 45. 9, 343. 95, 178

(c) What do you mean by Degree, Indegree and Out degree of graph? Describe briefly the Breath First Search algorithm.