Paper ID : 70067

Total Pages : 4

BCA (Semester-II) Examination, 2022

(Session 2021-23)

DATA STRUCTURE THROUGH "C"

[Paper Code : BC-203]

Time : Three Hours]

[Maximum Marks : 80

Note : Candidates are required to give their answers in their own words as far as practicable. The questions are of equal value. Answer **any five** questions.

1. What is an Array? Explain the types of Array. Write a C program to sort m×n matrix in ascending order where 'm' refers to rows and 'n' refers to columns.

2. What is Recursive function? Distinguish between normal function and recursion with suitable example.

3. Explain data structure. Discuss the types of data structure with neat diagram.

4. Write a C program to perform the following operation using single linked list :

(a) Create a node

(b) Insert a node

(c) Display a node

(d) Search a specific node

(e) Delete a node

(f) Exit

5. Write a C program to implement stack operation using structure consist of an array of items.

6. What is Queue? Discuss the types of queue. Explain the delete and insert operation in a queue with diagram.

7. What is Tree? Discuss binary tree traversal recursive algorithm in detail.

8. Explain searching and sorting. Discuss the types of searching with suitable examples.

9. What is Pointer? Write a C program to enter n number in an array. Print maximum and minimum number in the given list of array using pointer.

10. Write notes on **any two** from the following :

(a) Application of data structure

(b) Double linked list

(c) Binary tree

(d) Selection sorting

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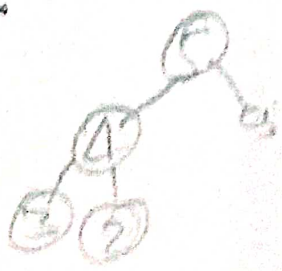

Paper ID : 70068 Total Pages : 2

BCA (Semester-II) Examination, 2022

(Session 2021-23)

SYSTEM ANALYSIS AND DESIGN

[Paper Code : BC-204]

Time : Three Hours] **[Maximum Marks : 80**

Note : Candidates are required to give their answer in their own words as far as practicable. Attempt **any five** questions. **Each** question carries **equal** marks.

1. What is DFD? Mention various steps in drawing DFD. Explain each step in detail.

2. What is feasibility analysis? What conditions are involved in feasibility analysis? Which consideration do you think most crucial and why?

3. What is Documentation? Differentiate between system and user documentation with their application.

4. Define System. How system is different from sub-system? Explain various types of system in detail.

5. What is system implementation process? Explain various system implementation methods with their merits and demerits.

6. What is Audit trial? Describe role of audit control trial in conversion? Who performs it? Explain in detail.

7. What is MIS? What are different methods of information gathering? Explain in detail.

8. What is SDLC? Explain various phases of SDLC in detail.

9. Explain the concept of waterfall model with the help of suitable diagram.

10. What is meant by system testing? Write the objectives of testing and also explain various testing techniques.

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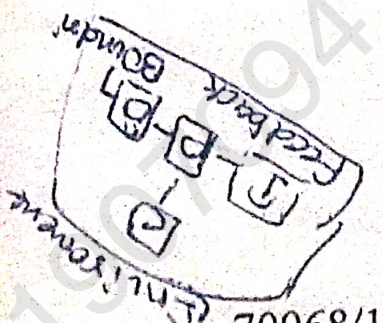

Paper ID : 70065 Total Pages : 2

BCA (Semester-II) Examination, 2022

(Session 2021-23)

DISCRETE MATHEMATICS

[Paper Code : BC-201]

Time : Three Hours] [Maximum Marks : 80

Note : Candidates are required to give their answers in their own words as far as practicable. The questions are of equal value. Answer **any five** questions.

1. Draw a Hasse-Diagram for the Poset $(P(S), \subseteq)$ where $P(S)$ is power set on set $= \{1, 2, 3\}$.

2. Define partitions of the set S and find out the partitions of $X = \{1, 2, 3\}$.

3. If $f(x) = 3x - 5$ and $f[g(x)] = 2x$ then find $g(x)$.

4. Show that set of all divisors of 12 form a Lattice.

5. Define equivalence relation with an example.

6. Is "Congurence Modulo n" is a equivalance relation? Explain it.

7. In a class of 25 students 12 have taken mathematics, 8 have taken mathematics but not biology. Find the number of students who have taken mathematics and biology and those who have taken biology but not mathematics. .

8. Define Group with an example.

9. Let $A = \{1, 2, 3, 4, 5\}$ $B = \{3, 4, 5, 6\}$

$C = \{x \in z : x \text{ is even}\}$

Find :

(a) $A - B$

(b) $B \cap A$

(c) $C - B$

(d) $(A \cap B) \cup C$

10. Write short notes of the following :

(a) Monoid

(b) Partition of sets

(c) Equivalence relation

(d) Lattice

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Paper ID : 70066 Total Pages : 2

BCA (Semester-II) Examination, 2022

(Session 2021-23)

COMPUTER ARCHITECTURE

[Paper Code : BC-202]

Time : Three Hours] [Maximum Marks : 80

Note : Candidates are required to give their answers in their own words as far as practicable. The questions are of equal value. Answer **any five** questions.

1. What is Data type and Number system? Explain Decimal, Binary, Octal, Hexa-Decimal number system with example.

2. Explain NOR gate, NAND gate and XOR gate with the help of diagram and truth table.

3. Explain Boolean algebra and also define Basic Law of Boolean Laws.

4. Explain different types of Flip-Flops.

5. Explain Timing sequence digital logic families.

6. What is floating point representation? Explain it with example and its advantage over fixed point representation.

7. What is Asynchronous Data Transfer? Explain Strobe control, Handshaking and Time Out.

8. What is Virtual Memory? Explain address space and memory space with diagram.

9. With neat sketch design and explain 4-bit biderectional shift register.

10. Write short notes on the following :

(a) Memory-Mapped (b) Fix point

(c) Ripple Counter (d) Auxiliary Memory

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