



24-12-2015

DOON UNIVERSITY, DEHRADUN
End Semester Examination, Third Semester, 2015
School of Technology

Integrated M.C.A.

Course: STM - 521 Introduction to Information Security and Cyber Laws

Time Allowed: 3Hours

Maximum Marks: 50

SECTION: A (Short Answer Type Questions/to be answered in about 25 words)

Attempt All Questions

(Marks: $2 \times 5 = 10$)

1. Define the term encryption.
2. What is a symmetric key?
3. Write down two private key cryptographic algorithms.
4. What is the cyber crime?
5. What is the Digital signature?

SECTION: B (Short Answer Type Questions/to be answered in about 100 words)

Attempt Any 4 Questions

(Marks: $5 \times 4 = 20$)

1. Write down the need of cyber law.
2. Explain how a cryptographic scheme works between a sender and receiver. Illustrate using proper diagram.
3. Write down the privacy concerns of cyber security.
4. Write a note on IT-Act 2008.
5. How a private communication can be made in a public world? Explain on a cryptographic perspective.

SECTION: C (Long Answer Type Questions to be answered in about 300 words)

Attempt All Questions

(Marks: $10 \times 2 = 20$)

1. Describe RSA algorithm. Using the public key $(e,n)=(7,15)$, encrypt the message 'a' and find the encrypted message. Use ASCII set as standard for input message.
2. What are various cyber attacks? What is the need of considering ethical issues involved in cyber security?



21-12-2015

DOON UNIVERSITY, DEHRADUN
End Semester Examination, Third Semester, 2015
School of Technology

Integrated M.C.A.
Course: STM - 519 Data Structures using 'C' or 'C++'

Time Allowed: 3Hours

Maximum Marks: 50

SECTION: A (Short Answer Type Questions/to be answered in about 25 words)

Attempt All Questions

(Marks: 2 × 5 = 10)

1. Define a sparse matrix with an example.
2. Create a node of a BST using C language.
3. What is a hash table?
4. Define a weighted graph with example.
5. Write the recursive function to print a linked list in reverse order.

SECTION: B (Short Answer Type Questions/to be answered in about 100 words)

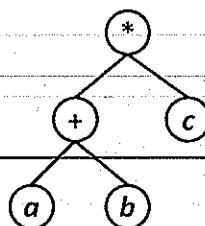
Attempt Any 4 Questions

(Marks: 5 × 4 = 20)

1. Generate a BST for following data and search the element 9 in the generated tree by showing all the steps: 4, 7, 2, 15, 3, 9, 10, 16.
2. Write the function for any sorting algorithm in C language.
3. Create a B tree of order 3 for following data: 13, 18, 19, 17, 15, 24, 26.
4. Draw the graph for following adjacency matrix:

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
<i>a</i>	0	1	1	0	0
<i>b</i>	1	0	0	0	1
<i>c</i>	1	0	0	0	1
<i>d</i>	0	0	0	0	0
<i>e</i>	0	1	1	0	0

5. Consider following expression tree. Visit the tree using DFS manner starting from the root. How is this visit related to infix/prefix/postfix expression of the expression tree?



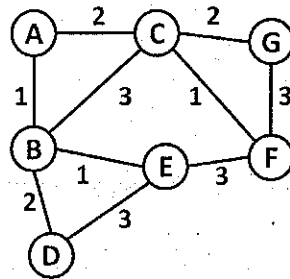
(P.T.O.)

SECTION: C (Long Answer Type Questions to be answered in about 300 words)

Attempt All Questions

(Marks: $10 \times 2 = 20$)

1. Generate two stacks S_1 and S_2 of 4 elements each. Write the function for push and pop operations. Now using dynamic memory allocation, create another stack S_3 and push the elements of S_1 and S_2 into S_3 such that S_3 contains elements from S_1 followed by the elements from S_2 in an alternative manner. Write appropriate functions in C language.
2. Find out the minimum spanning tree from following graph. Now write a recursive function using C language to visit the resulting tree in post-order manner by considering the node A as root of the resultant tree. What is the postorder sequence?



(End of the Question Paper)