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1B3N19154 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc. Computer Science Degree Examination, November 2019

BCSS3B04 – Data Structures

(2018 Admission onwards)

Time: 3 hours Max. Marks: 80

PART -A

Answer *all* questions

Each question carries *One* mark

1. Visiting each and every element of a tree Data structure is called .....
2. .....data structure is used to implement recursion
3. Linked list is a .....Data structure
4. The process of removing items from an empty stack is called .....
5. .....Data structure is used to implement Breadth First Search traversal in Tree
6. The prefix form of A * B / (C + D) is .....
7. Adjacency lists are used for representing .....
8. Selected key in the quick sort algorithm is called.....
9. The number of sub trees of a node is called its .....
10. The maximum possible number of edges in a directed graph with no self loops having eight vertices is.....
11. .....sorting is used to sort in an ordered list of items
12. The worst and average case complexity of Bubble sort is.....

(12 x 1 = 12 Marks)

PART -B

Answer any *seven* questions

Each question carries *Two* mark

13. What is an array?
14. List various Tree traversal techniques
15. What is hashing ?
16. What are different types of Expressions ?
17. What is a circular linked list ?
18. Define height of a Tree
19. What is an AVL Tree?
20. Compare Linear search and Binary search
21. Define minimum spanning tree of a graph?

(7 x 2 = 14 Marks)

PART - C

Answer any *six* questions
Each question carries *Five* mark

22. Differentiate Single linked list and Circular linked list.
23. Briefly explain Threaded binary tree and its advantages.
24. Discuss the applications of stack.
25. Briefly explain graph search methods with an example.
26. What is hashing ?what are the different hashing functions.
27. Briefly explain binary search with an example.
28. Describe various tree traversing techniques with example.
29. Explain Quick sort with an example.

(6 x 5 = 30 Marks)

PART - D

Answer any *three* questions
Each question carries *Eight* mark

30. Discus in detail various categories of Data structures.
31. Explain in detail about the representation of graph.
32. Define sparse matrix ? With an example explain its representation.
33. Write an algorithm to implement stack using Linked list .
34. Construct an AVL Tree from the given values.
    46 , 24 , 30 , 86, 93, 8, 12, 36, 49, 57, 27, 10

(3 x 8 = 24 Marks)

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Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc. Computer Science Degree Examination, November 2019

BCSS3B05 – Operating System

(2018 Admission onwards)

Time: 3 hours Max. Marks: 80

Part A
Answer all Questions
Each question carries 1 marks

1. What is the multi tasking?
2. Define the term process.
3. What is the PCB?
4. Give the advantage of time sharing system.
5. What is the suspended state of process?
6. What is the situation of race condition?
7. List any two preemptive scheduling policies.
8. What is the internal fragmentation?
9. Give the concept of logical address.
10. What is thrashing?
11. List any three biometric authentication systems.
12. Give a short note on SMP of windows. **(12 x 1=12 Marks).**

Part B
Answer any 7 Questions
Each question carries 2 marks

13. Compare the features of Simple and multiprogramming batch system.
14. What are the advantages of Real time system.
15. Explain briefly mutual exclusion
16. Define a deadlock.
17. Explain the concept of access matrix.

18. Explain distributed system
19. Give a short note on address binding.
20. Explain the concept of virtual memory.
21. What is the token based authentication method?

(2 x 7=14 marks)

Part C
Answer any 6 Questions
Each question carries 5 marks

22. Explain Time sharing system.
23. Explain different process states.
24. What is the semaphore? Explain the working of semaphore.
25. Compare the features of multilevel and feedback queue scheduling algorithms
26. Explain concept of swapping.
27. Explain mechanisms for page replacement of memory.
28. Explain differences of traditional OS and Mobile OS
29. Explain different deadlock avoidance methods.

(6 x5 =30 Marks)

Part D
Answer any 3 Questions
Each question carries 8 marks

30. Explain evolutions of operating systems.
31. Explain different CPU Scheduling algorithms with examples.
32. With the help of a diagram explain the concept of demand paging.
33. Explain Bankers algorithm with examples.
34. Describe the architecture of a mobile operating system.

(3 x 8 = 24 Marks)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc. Computer Science Degree Examination, November 2019

A11 – Fundamentals of Digital Electronics

(2018 Admission onwards)

Time: 3 hours Max. Marks: 80

PART A

Answer all questions. Each question carries *one* mark.

1. What is 2's compliment of 1?
2. What is NOR gate?
3. Name the group of flip flop used in data storage?
4. How many AND gate required to realize Y = CD + EF + G ?
5. How many select line will a 16 to 1 multiplexer will have ?
6. On K map grouping of 0's produce _____ expression ?
7. Define base of a number system?
8. What is gray code of decimal number 6?
9. A full adder is characterized by _____ input and _____ output
10. Name of the Universal gate?
11. Define an encoder?
12. What is mean by bit?

(12x1=12 Marks)

PART B

Answer all questions. Each question carries *two* marks

13. Convert $(101101.01101)_2$ to Octal and Hexadecimal number system?
14. What is mean by multiplexer and demultiplexer?
15. What is K-map and express its limitations?
16. Explain basic properties of Boolean algebra?
17. What is SR flip flop?
18. What is excess-3 code?
19. Can shift register can be used as Counter?

(7 x 2=14 Marks)

PART C

Answer any *six*. Each question carries *five* marks

20. What is a half adder ? Design the half adder circuit.
21. (a)What is 1's compliment? Explain with example?

    (b)Explain Unicode, Gray code and BCD code with examples.
22. State and prove De Morgan's Law.
23. Minimize the following function using K map.

    (a) $F(W,X,Y,Z) = \sum(0, 4, 8, 12)$

    (b) $Y(A,B,C,D) = \prod(0, 1, 3, 5, 6, 7, 10, 14, 15)$
24. Realize the XOR gate using AND, OR and NOT gates.
25. What is decoder? Compare decoder and demultiplexer with suitable block diagram.
26. How do we construct a T- Flip flop by using JK Flip flop?
27. Explain Basic gate?

(6 x5=30 Marks)

PART D

Answer any *three*. Each question carries *eight* marks

28. Explain working of RS and J-K flip flop.
29. With a diagram, explain the working of a successive approximation A/D converter.
30. What is Half adder and Full adder? Construct logic circuit diagram for half adder by using NAND gate only.
31. Explain the working of a BCD to 7-segment decoder.
32. With a help of neat diagram explain working of successive approximation of A/D Converter.

(3x8=24 Marks)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc. Computer Science Degree Examination, November 2019

A12 – Web Designing

(2018 Admission onwards)

Time: 3 hours Max. Marks: 80

PART – A

Answer *all* questions.

Each question carries One mark.

Who is the father of WWW?

DHTML stands for .....

Which tag is used to create important text in HTML?

How input type tag is used in HTML?

How can write JavaScript in HTML?

What you meant by WORA in JavaScript?

How can represent single line comment in JavaScript?

What are the benefits of using CSS?

Write down any four position values in CSS.

XAMPP stands for.....

List any two features of Drupal.

Name any two famous E-Commerce websites.

(12 x 1 = 12 Marks)

PART – B

Answer *all* questions.

Each question carries Two marks.

What is the purpose of using <p>,
, <pre> and <a> tags?

How hyperlinks are used in HTML?

Use the correct HTML attribute, and CSS, to set the color of the paragraph to "blue".

What do you meant by DOM?

Write down any four built-in functions in JavaScript with example.

What are the features of LAMP?

What is the role of archive manager?

(7 x 2 = 14 Marks)

PART - C

Answer any *six* questions.
Each question carries Five marks.

20. Compare the features of HTML with HTML5.
21. Differentiate between ordered and unordered list.
22. How Cascading Style Sheets control the style of web development in a simple and easy way?
23. Explain about different HTML Events.
24. With the help of an example explain about JavaScript Arrays.
25. Write down the syntax for...in loop in JavaScript. Explain with an example.
26. What are the uses of E-Commerce Websites?
27. Write a note on Module Manager.

(6 x 5 = 30 Marks)

PART – D

Answer any *three* questions.
Each question carries Eight marks.

28. What are HTML Forms? Prepare an HTML form for student feedback system.
29. Why JavaScript is used for client side programming?
30. Explain in detail about the various ways of inserting CSS into webpage?
31. Write notes on: (a) Frontpage Manager (b) Extensions Manager
32. Explain the role of Drupal in Social Media.

(3 x 8 = 24 Marks)