

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester B.Sc Degree Examination, November 2020
BCS3B04 - Data Structures
(2019 Admission onwards)

Time: 2 hours

Max. Marks: 60

Part A

Answer all questions.

Each question carries Two marks.

Ceiling - 20 Marks

1. What are heap trees?
2. What is linear probing in hashing?
3. Write down the best , average and worst case time complexities of quick sort algorithm.
4. What is a Graph?
5. State the advantages of stack using Linked list over a stack using array
6. What is linked list?
7. What is adjacency matrix with respect to a graph?
8. What is height of a binary tree?
9. Write the prefix and postfix form of the expression $A *(B+C)$
10. Write an algorithm for implementing linear search
11. Define hashing
12. What are weighted graph?

Part B

Answer all questions.

Each question carries Five marks.

Ceiling - 30 Marks

13. Discuss Kruskals Algorithm
14. Discuss various collision resolution methods
15. Write down the algorithm for insertion sorting
16. Write an algorithm to insert an item to an array stack
17. Explain Breadth First search algorithm
18. Write down the recursive algorithms for various binary tree traversals
19. With suitable examples, explain sequential representation of a binary tree

Part C

Answer any one question.

Each question carries Ten marks.

20. Write a program to implement quick sorting in C
21. Write the algorithm to implement stack using linked list

(1 x 10 = 10 Marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester B.Sc Degree Examination, November 2020
BCS3B05 - Operating System Concepts
(2019 Admission onwards)

Time: 2 hours

Max. Marks: 60

Part A

Answer all questions.
Each question carries Two marks.
Ceiling - 20 Marks

1. What is Deadlock?
2. What is Indexed Allocation?
3. What is Time Sharing?
4. What are System Calls?
5. What are Shared Libraries?
6. What is a Process?
7. What are the four levels of security measures to protect the system from malicious access?
8. What is Valid Bit?
9. Write a note on 'safe state'.
10. What are the two types of Security Violations?
11. What is Scheduling Algorithm?
12. What is Mutual Exclusion?

Part B

Answer all questions.
Each question carries Five marks.
Ceiling - 30 Marks

13. What are the requirements for the solution to a critical Section Problem.
14. Write about Mobile Operating System.
15. Explain the Process State Transitions.
16. Differentiate Dynamic Loading and Dynamic Linking.
17. Explain Multiprocessor System
18. Explain time sharing operating system?
19. What is Free Space Management?

Part C

Answer any one questions.

Each question carries Ten marks.

20. Explain Process States and its transitions
21. Differentiate Paging and Segmentation.

(1 x 10 = 10 Marks)

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Name:.....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester B.Sc Degree Examination, November 2020
BCS3A11 - Numerical Skills
(2019 Admission onwards)

Time: 2.5 hours

Max. Marks: 80

Part A

Answer all questions.

Each question carries Two marks.

Ceiling - 25 Marks

1. What is the Principle of Duality?
2. A NAND- NAND circuit is normally equivalent to circuit.
3. Convert the binary number 110101 into Gray code.
4. What do you mean by minterm?
5. Draw the block diagram of a D flip flop.
6. What do you mean by Statistical Inference?
7. Define Arithmetic mean.
8. What is combinational circuit?
9. What is an AND gate?
10. What are registers?
11. Convert 100101 gray code in to Binary.
12. Convert 111101 gray code in to BCD.
13. State the Boolean commutative law.
14. What do you mean by positive logic?
15. Give any two uses of Statistics.

Part B

Answer all questions.

Each question carries Five marks.

Ceiling - 35 Marks

16. Convert binary 1001 to its gray equivalent and gray 0110 to its binary equivalent.
17. What is ASCII code. Where is it used ?
18. Apply DeMorgan's theories to the Boolean expression $((A+B'(C+D'))'$
19. Find the mean of these set of numbers: 100, 1050, 320, 600 and 150.
20. Find the value of F for all possible values of the variables for the Boolean function $F=ABC$
21. Realize the XONR Gate using AND, OR and NOT gates, Explain the design.
22. What are the characteristics of Statistics Analysis.
23. Describe half adder with the help of the logic diagram and truth table.

[P.T.O]

Part C

Answer any 2 questions.

Each question carries Ten marks.

24. Minimize the expression $F(A,B,C,D) = \sum m(1,3,5,8,9,11,15)$ in both SOP and POS forms using K-map. Realise the simplified expression using NAND/NOR gates.
25. Simplify using K Map $Y = A'B'C'D + A'B'CD' + A'BCD' + A'BCD + AB'C'D + ABCD'$
26. Construct the Hamming code for the data 11110 (Even parity).
27. Explain the working of JK flip flop .

(2 x 10 = 20 Marks)

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Reg.No:.....

Name:.....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester B.Sc Degree Examination, November 2020
BCS3A12 - Web Designing
(2019 Admission onwards)

Time: 2.5 hours

Max. Marks: 80

Part A

Answer all questions.

Each question carries Two marks.

Ceiling - 25 Marks

1. What is a WordPress post?
2. What are the different types of operators in javascript?
3. Name any two most commonly used Joomla! Templates.
4. What are the heading tags in HTML?
5. How to publish a WordPress page?
6. What do you mean by Joomla! user groups?
7. What are components in Joomla?
8. What is a WordPress page?
9. How to insert comments in HTML?
10. What do you mean by content manager in Joomla!
11. What is HTML?
12. What are the different types of assignment operators in javascript?
13. What is the purpose of copy icon?
14. What is the purpose of edit icon?
15. Why javascript is called client side scripting language?

Part B

Answer all questions.

Each question carries Five marks.

Ceiling - 35 Marks

16. Write a short note on WordPress and its features.
17. Briefly explain about Joomla framework.
18. Briefly explain about different popup boxes in javascript.
19. Explain the features of HTML5?
20. Briefly explain about different popup boxes in javascript.
21. What is a category? What are the functions of category manager in Joomla!
22. Briefly explain about the capabilities of Article manager.
23. How categories are managed in Joomla!

[P.T.O]

Part C

Answer any 2 questions.

Each question carries Ten marks.

24. Explain WordPress setting and its capabilities in detail.
25. Create a static webpage for the department of computer science using HTML (List and Table should be used)
26. Explain Joomla! article manager in detail.
27. Explain in detail about different control flow statements in javascript.

(2 x 10 = 20 Marks)