MAHATHMA GANDHI UNIVERISTY
BCA (HONOURS)SECOND SEMESTER EXAMINATION
(2024 ADMISSION ONWARDS)
MG2CCRBCA101– Data Structures
Model Question Paper

Duration: 2hrs Maximum Marks: 70
*Students should attempt at least one question from each course outcome to enhance their overall outcome*attainability.

Part A
Very Short Answer Questions
Answer All Questions
Each question carries 2 marks

1.Differentiate between linear and non-linear Data Structures. [U][CO1]
2.How does the pop operation change the state of the stack in an array-based implementation? [U][CO2]
3.Define a linked list and explain its basic structure. [U][CO3]
4.What is a walk in a graph? How does it differ from a path? [An][CO4]
5.Discuss the disadvantages of Binary Search? [A][CO1]
(5*2=10 Marks)

Part B
Short Answer Questions (5 out of 7 Questions)
Each question carries 6 marks

6.Differentiate between best-case and worst-case complexities. [An][CO1]
7.Compare the advantages and disadvantages of using postfix notation over infix notation for arithmetic expression evaluation. [A][CO2]
8. Explain with diagrams how a circular linked list is implemented. What are its advantages over a singly linked list? [A][CO3]
9.Compare recursive implementation and iterative implementation with suitable examples. [An][CO3]
10.Discuss the similarities and differences of Insertion Sort and Selection Sort. [An][CO1]
11. Explain the array implementation of a simple queue and circular queue with algorithms and examples. [A][CO2]
12. Explain insertion in an AVL tree with a suitable example. [U][CO4]
(5*6=30 Marks)

Part C
Essay Questions (2 out of 3 Questions)
Each question carries 15 marks

13.Explainthe mergingof two sorted arrays with an algorithm and a suitable example. [A][CO1]
14.Compare and contrast circular queue, Double-ended-queue and priority queues with examples. [An][CO2]
15.Explain hashing. Discuss various collision handling methods that can be implemented to reduce collision. [U][CO3]
(2*15=30 Marks)

QPCode

Reg.No : .....

Name : .....

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
MGU-UGP BCA (HONOURS) EXAMINATION APRIL 2025
SECOND SEMESTER
MG2CCRBCA102 OPERATING SYSTEMS
(2024 ADMISSION ONWARDS)

Duration: 2 Hours **Maximum Marks: 70**

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C), Skill(S), Interest (I) and Appreciation (Ap)

Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.

Part A
Very Short Answer Questions
Answer all questions
Each question carries **2** marks

1. Define the user view of an operating system. [K] [CO1]
2. What is the purpose of a Process Control Block (PCB)? [U] [CO2]
3. What are the benefits of the Co-operating Process? [U] [CO3]
4. What is internal fragmentation? [U] [CO4]
5. What is a page fault in demand paging [U] [CO4]

[2X5 =10]

Part B
Short Answer Questions
Answer any **5** questions
Each question carries **6** marks

6. Explain the working of a simple operating system structure. [U] [CO1]
7. Explain the different states of a process with a diagram. [U] [CO2]
8. Explain the advantages and disadvantages of multithreading. [U] [CO2]
9. What are semaphores? Explain two primitive semaphore operations. What are its advantages? [An] [CO3]
10. Define system call. Explain the importance of system calls in an operating system. [K] [CO1]
11. Describe how semaphores are used to solve the critical-section problem. [U] [CO3]
12. What is paging, and why is it used in memory management? [U] [CO4]

[6X5 =30]

Part C
Essay Questions
Answer any **2** questions
Each question carries **15** marks

13. Explain various process scheduling algorithms with suitable examples [U] [CO2]
14. Describe the different methods of interprocess communication. [U][CO3]
15. Explain the characteristics and workings of FIFO, LRU, and Optimal page replacement algorithms with examples. [A][CO4]

[15X2 =30]

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

MGU-BCA (HONOURS)

SECOND SEMESTER EXAMINATION

(2024 ADMISSION ONWARDS)

MG2SECBCA100: WEBTECHNOLOGIES

MODEL QUESTION PAPER

Duration: 1hr Maximum Marks: 35

Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.

Part A

Short Answer Questions

Answer Any Four Questions. Each question carries 5 marks.

1. Define HTML and explain its importance in web development. [K][1]
2. Explain how a table is created in HTML. [K][1]
3. List three advantages of making a website responsive. [U][1]
4. Define the Document Object Model (DOM) and explain its role in JavaScript. [K][2]
5. Describe how getFullYear() and getMonth() methods are used in JavaScript. [U][2]
6. How does AJAX improve user experience compared to traditional web applications? [U][2]

(4 X 5 = 20 Marks)

Part B

Essay Questions

Answer any 1 out of 2 Questions. Each question carries 15 marks.

7. Define the <form> tag and describe its essential attributes. Provide an example of a simple HTML form. [A][1]
8. Develop a program using JavaScript function that extracts the first three letters of each word in a given sentence. [A][2]

(1X 15=15 Marks)

QP Code **Reg No……**

Name……..

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

FYUGP (HONOURS) BCA EXAMINATION APRIL 2025

SECOND SEMESTER

MG2VACBCA100 – INDIAN CONSTITUTION: LEGAL AND ETHICAL PERSPECTIVES FOR IT

(2024 ADMISSION ONWARDS)

Duration: 1 Hours **Maximum Marks: 35**

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C), Skill(S), Interest (I) and Appreciation (Ap)

Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.

Part A

Short Answer Questions

Answer any **7** questions

Each question carries **5** marks

1. Define the constitution of India and write the historical background of the constitution. [K][CO1]
2. How do fundamental rights differ from the Directive Principles of State Policy?[U][CO1]
3. What fundamental digital rights are guaranteed by the Constitution of India? [K][CO1]
4. Describe the Liberal-Intellectual principles of India's Directive Principles of State Policy (DPSP). [K][CO1]
5. What is meant by the separation of powers in governance? [K][CO2]
6. Differentiate between IT policy-making and digital transformation. [U][CO2]
7. How can the legislature actively shape IT policy-making to address emerging technological challenges? [A][CO2]
8. Compare the roles of the Judiciary and the executive in IT governance. [An][CO2]
9. Describe the effects of misinformation on individuals. [U][CO3]
10. List the factors that influence online behaviour. [K][CO3]