

BCA Fourth Semester Examination ,May – 2021**(Held in October 2021)****(Faculty of Science)****FIRST PAPER****Data Structure and Algorithms****Paper Code :42401****Time Allowed: 1½ Hours****Maximum Marks : 70**

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

PART-I

1. Attempt any 5 questions out of the following. Each question carries 2 marks.

5x2=10

(Words limit up to 20 words each)

- What is LIFO?
- What are Multidimensional Arrays?
- What is an Ordered List?
- Differentiate NULL and VOID
- What is Linear Search?
- In what areas do data structures are applied?
- What is the minimum number of nodes that a binary tree can have?
- What is Data Abstraction?
- How does dynamic memory allocation help in managing data?
- What is Stack?
- What is the minimum number of queues needed when implementing a priority queue?
- What is Dequeue?

2. Attempt any 2 questions out of the following. Each question carries 10 marks.

2x10=20

(Word limit upto 50 words each)

- Briefly explain Recursive Algorithm.
- Differentiate between a linear and nonlinear data structure.
- What is a Bubble Sort and how do you perform it?
- Give a basic algorithm for searching a binary search tree.

P.T.O

PART-II

Attempt any 2 questions in all .

2X20=40

3. Define an Array. What are the types of array and their operations? 6+14
4. Define an Algorithm. What are the properties of an algorithm? What are the types of algorithms? 4+8+8
5. Explain a Linked List. Explain the types of linked lists. How would you sort a linked list? 6+6+8
6. Write an algorithm to show the reverse of link list? 20
7. Describe Binary Tree and its properties with example. 8+12
8. Explain the following: 10+10
 - a. Applications of Stacks
 - b. Priority Queues
9. What is Hashing Technique? Describe in detail. 20
10. Write short note on: 10+10
 - a. Insertion sort
 - b. Radix sort

BCA Fourth Semester Examination, May – 2021**(Held in October 2021)****(Faculty of Science)****SECOND PAPER****PHP Programming****Paper Code :42402****Time Allowed: 1½ Hours****Maximum Marks : 70**

(1) No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

(2) All the parts of one question should be answered at one place in the answer book.

PART-I

1 Attempt any 5 questions out of the following. Each question carries 2 marks.

5x2=10

(Words limit up to 20 words each)

- a) Who is known as the father of PHP?
- b) What is pear in PHP?
- c) Explain the difference between static and dynamic websites?
- d) How is the comparison of objects done in PHP?
- e) What is the main difference between require () and require once ()?
- f) How can we display information of a variable and readable by a human with PHP?
- g) How can we connect to a MySQL database from a PHP script?
- h) Which function gives us the number of affected entries by a query?
- i) How can you pass a variable by reference?
- j) What is the definition of a Session?
- k) How to initiate a session in PHP?
- l) What does the scope of variables mean?

2. Attempt any 2 questions out of the following. Each question carries 10 marks.

2x10=20

(Word limit upto 50 words each)

- a) Explain features of PHP in detail.
- b) What do you understand by database handling in PHP? Explain it.
- c) Write the differences between GET and POST requests?
- d) How do you define pattern matching in string?

PART-II

Attempt any 2 questions in all .

2X20=40

3. How many types of data types are available in PHP? Explain them in detail with syntax. 20
4. (a) What is the difference between Variable and Constant? 8
(b) Write a program to find the factorial of a given number $n = 10$ using for loop. 12
5. (a) What do you understand by Parameter Passing? 6
(b) What are the library functions related to string using in PHP? Explain them in detail. 14
6. (a) What do you understand by functions in PHP? 6
(b) Write a program using function in which:
(i) Define functions named as getRate of Interest () in which write a code to return the value of rate of interest of 3 different banks i.e. SBI, ICICI, HDFC. 14
7. (a) What do you understand by Session Management? Explain it in detail. 10
(b) Define the terms: Try, Catch, Throw with example. 10
8. What do you understand by Exception Handling? Explain it in detail with code to handle exceptions. 20
9. (a) Write a PHP script to open, close, read and write into a file. Explain with example. 12
(b) Write a PHP script to upload a file. 8
10. (a) What are the basic database operations? Explain them in detail. 10
(b) Explain how to rename a file in PHP. 10

BCA (Sem. IV)

BCA Fourth Semester Examination, May – 2021
(Held in October 2021)
(Faculty of Science)

THIRD PAPER

Advanced Database Concepts

Paper Code : 42403

Time Allowed: 1½ Hours**Maximum Marks : 70**

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

PART-I

1. Attempt any 5 questions out of the following. Each question carries 2 marks.

5x2=10

(Words limit up to 20 words each)

- a) What are atomicity in Transactions?
- b) Define Concurrency Control.
- c) What is Recoverability?
- d) Define Server System Architecture.
- e) What is Object Based Database?
- f) What is Distributed System?
- g) What is Persistent Programming Language?
- h) What is Distributed Transactions?
- i) Define Interoperation Parallelism.
- j) What are cursors in PL – SQL?
- k) What do you mean by Sequential Control Statements in PL – SQL?
- l) What are Exception Handling?

2. Attempt any 2 questions out of the following. Each question carries 10 marks.

2x10=20

(Word limit upto 50 words each)

- a) Explain implementation of Isolation with Deadlock handling.
- b) Explain Parallel Systems in detail.
- c) Explain Concurrency Control in Distributed Databases.
- d) Describe Data types and Control Structure in PL – SQL.

P.T.O

PART-II

Attempt any 2 questions in all .

2X20=40

3. Explain different transaction states with diagram in detail.
4. Explain Concurrency Control with Time Stamp based Protocol.
5. Explain Distributed System and Server System Architecture in detail.
6. What is Complex Data Type in object based databases? Describe structure types and table inheritance in SQL.
7. What is Distributed Database? Explain Distributed Data Storage and Commit Protocol in detail.
8. What is Inter Query Parallelism? Explain the I/O Parallelism in detail.
9. What is PL/SQL? Explain Triggers, Procedures and Packages in detail.
10. Describe the following for PL/SQL :
 - 1) Control Structures and Conditional Control
 - 2) Sequential Control Statements
 - 3) Character Sets and PL/SQL Sentences

BCA (Sem. IV)

BCA Fourth Semester Examination, May – 2021**(Held in October 2021)****(Faculty of Science)****FOURTH PAPER****Data Communication and Net Working**

Paper Code:42404

Time Allowed: 1½ Hours**Maximum Marks : 70**

No supplementary answer book will be given to any candidate. Hence the candidates should write the answers precisely in the main answer book only.

PART-I**1. Attempt any 5 questions out of the following. Each question carries 2 marks.****5x2=10**

(Words limit up to 20 words each)

- a) List the uses of Internet.
- b) Differentiate between LAN and MAN.
- c) What is the process of configuring a network?
- d) Enumerate different layers of OSI model.
- e) What do you mean by Modulation?
- f) What is Channel Allocation Problem?
- g) Name the standard which is used for LANs.
- h) What is the role of a bridge?
- i) What is the major role of application layer?
- j) What is Telnet?
- k) What does SNMP stand for?
- l) State the equipments that are needed for a Broadband connection.

2. Attempt any 2 questions out of the following. Each question carries 10 marks.**2x10=20**

(Words limit up to 50 words each)

- a) What are the key components of a network?
- b) Explain the role of MAC sublayer.
- c) Write the network layer routing algorithm.
- d) Discuss the differences between Wi-fi and Bluetooth.

P.T.O

PART-II

Attempt any 2 questions in all .

2X20=40

3. With the help of diagram explain different types of network topology.
4. Explain different categories of network.
5. How is error detection and correction done? Explain
6. Explain different Data Link Layer Protocols.
7. Differentiate between Switches and Routers.
8. Illustrate different types of protocols used in the transport layer.
9. Discuss DHCP and DNS in detail .
10. Describe the basic Mobile Communication Network Model.
