

BCA Fourth Semester Examination, May – 2019
(Faculty of Science)

FIRST PAPER

Data Structure and Algorithms

Paper Code :4611

Time Allowed: Three 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.

(Attempt all six questions)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any 10 questions. Each question carries 1 mark.

10x1= 10

(Words limit 20-25 words)

- a) What is Pseudo Code?
- b) What is Space Complexity?
- c) How can be Time Complexity measured?
- d) How is Array represented in memory?
- e) Write four string operations.
- f) What is Recursion?
- g) Define Circular Linked List.
- h) Define Queue Data Structure.
- i) Why is searching easier in BST?
- j) Differentiate Searching and Sorting.
- k) Write time complexity of Insertion Sort.
- l) What is the prerequisite for Binary Search?

2. Attempt all questions. Each question carries 5 marks.

4x5=20

(Word limit 50 words each)

- a) Differentiate one – dimensional and two – dimensional Array.
- b) How is an element deleted at the end in Linked List ? Write algorithm.
- c) Write the algorithms for inserting and deleting an element in QUEUE.
- d) Why is Warshall algorithm used ? Write its algorithm.

P.T.O

PART-II

UNIT I

3. What are the characteristics of an algorithm? How is an algorithm analyzed? What are the complexity measures existing for analyzing an algorithm? **3+3+4**

OR

How is an element inserted and deleted in ARRAY? Write specific algorithm for both the operations. **5+5**

UNIT II

4. Explain each insertion operation of Linked List with algorithm: **5+5**
(a) At the beginning
(b) At the end

OR

Explain Insertion and Deletion operations of STACK in detail with algorithm. **5+5**

UNIT III

5. Define each with example: **3+4+3**
(a) Circular Queue
(b) Double Ended Queue
(c) Priority Queue

OR

Explain any two Binary Tree traversal operations with algorithm: **5+5**
(a) In – Order Traversal
(b) Pre – Order Traversal
(c) Post – Order Traversal

UNIT IV

6. Explain Depth First Traversal GRAPH technique with suitable example. **10**

OR

Explain any two techniques: **5+5**
(a) Binary Search
(b) Bubble Sort
(c) Selection Sort

BCA Fourth Semester Examination, May – 2019**(Faculty of Science)****SECOND PAPER****PHP Programming**

Paper Code :4621

Time Allowed: Three 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.

(Attempt all six questions)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any 10 questions. Each question carries 1 mark.

10x1= 10

(Words limit up to 20 words each)

- a) Name three conditional statements in PHP.
- b) How can we get the properties (size, type, width, height) of an image using PHP image function?
- c) What is the difference between Array Combine and Array Merges?
- d) Name different type of errors in PHP.
- e) State the difference between include() and include once().
- f) What is Juggling in PHP?
- g) Stat the difference between '=' and '===' in PHP.
- h) Define String.
- i) State the difference between 'for' and 'foreach' statement.
- j) Write the function name to delete an element from an array.
- k) Differentiate between 'echo' and 'print' in PHP.
- l) State the purpose of 'n12br' string function.

2. Attempt all questions. Each question carries 5 marks.

4x5=20

(Word limit up to 50 words each)

- a) Differentiate between Client Side and Server Side Scripting.
- b) Explain functions in PHP, in detail. Write a function to swap two numbers without using third variable.
- c) What are Cookies? How can you create, access and delete a cookie in PHP? Explain with example.
- d) Write a PHP script to insert records of student table through form and display records in table format.

PART-II

UNIT I

3. (a) What is PHP? Explain data types and variables in PHP. **4**
(b) What is the scope of variables? List and explain all scope of variables and super global variables in PHP with example. **3**
(c) Define constant in PHP with example. What is implicit and explicit casting in PHP? **3**

OR

- (a) Differentiate between numeric and associate array with example. Write a PHP script to create a multidimensional array. **5**
(b) Create an associative array using the countries as keys, the cities as values and transform it into 2-Dimensional array and display the data as a table. **5**

UNIT II

4. What are functions in PHP? Explain its advantages and various types with example. Describe function overloading and overriding. **10**

OR

- (a) How pattern matching is performed in PHP? Explain. **5**
(b) Explain strpos(), settype(), strcmp(), substr(). **5**

UNIT III

5. (a) What is Session? How to read and write session variables? What is the difference between session and cookie? **7**
(b) Explain Exception handling mechanism with example. **3**

OR

- (a) How to create custom exception class? Explain with example. **6**
(b) Explain GET and POST method with example. **4**

UNIT IV

6. (a) Write a PHP script to open, close, read and write into a file. Explain with example. **5**
(b) What is File Handling in PHP? Write a PHP script to upload a file. **5**

OR

- (a) What is MySQL? What are different data types in MySQL? Explain with example. **6**
(b) Write connectivity and selecting database statement which is used to connect PHP with MySQL. **4**

BCA Fourth Semester Examination, May – 2019
(Faculty of Science)**THIRD PAPER****Advanced Database Concepts**

Paper Code : 4631

Time Allowed: Three 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.

(Attempt all six questions)

Part I (Question No. 1 & 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any 10 questions. Each question carries 1 mark.

10x1= 10

(Words limit up to 20 words each)

- a) What are Transactions?
- b) Define Serializability.
- c) What do you mean by Concurrency Control?
- d) Define Database System Architecture.
- e) What is Parallel System?
- f) What is Persistent Programming Language?
- g) Define Distributed Data Storages.
- h) What is Interquery Parallelism?
- i) What is Cursor in PL/SQL?
- j) What is Distributed Transaction?
- k) What are Triggers?
- l) What do you mean by Exception Handling?

2. Attempt all questions. Each question carries 5 marks.

4x5=20

(Word limit upto 50 words each)

- a) Describe implementation of Atomicity and Durability.
- b) Explain Distributed System in detail.
- c) Explain Two – phase Commit Protocol.
- d) Describe control structure in PL/SQL.

P.T.O

PART-II

UNIT I

3. Explain transaction states with diagram in detail. **10**

OR

What is Concurrency Control ? Explain Lock Based Protocol. **10**

UNIT II

4. Explain centralized and client – server architecture in detail. **10**

OR

What is Object – Based Database? Describe structure types and inheritance in SQL. **10**

UNIT III

5. What is Distributed Database? Explain Distributed Transaction in detail. **10**

OR

What is I/O Parallelism? Explain Intraoperation and Interoperation Parallelism. **10**

UNIT IV

6. What is PL\SQL? Explain exception handling in detail. **10**

OR

Describe following for PL / SQL : **4+3+3**

1) Packages

2) Conditional Control

3) Advantage of PL/SQL

BCA Fourth Semester Examination, May - 2019
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FOURTH PAPER

Data Communication and Net Working

Paper Code:4641

Time Allowed: Three 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.

(Attempt all six questions)

Part I (Question No. 1& 2) is compulsory & Part II (Question No. 3, 4, 5 & 6) has internal choice.

PART-I

1. Answer any 10 questions. Each question carries 1 mark.

10x1= 10

- a) What do you mean by Data Communication?
- b) What are the key functions of data link layer?
- c) What is Synchronous Transmission?
- d) What do you mean by Noiseless Channels?
- e) What is Ethernet?
- f) What do you mean by Bridges?
- g) What do you mean by Transmission Impairment?
- h) What is MAN?
- i) What are the features of TCP?
- j) What is the purpose of session layer?
- k) What is Network ? Explain characteristics of Networks.
- l) What is SMTP?

2. Attempt all questions. Each question carries 5 marks.

4x5=20

- a) What are the options and trade – offs involved in designing a LAN?
- b) Discuss features of various standards for physical layers.
- c) What is Congestion? Explain.
- d) What is DNS? Explain the working of a DNS.

P.T.O

PART-II

UNIT I

3. What do you mean by Topology? Explain various types of Network Topologies. **10**

OR

Explain the different types of Transmission Modes. Write the components of network. **10**

UNIT II

4. What is Multiplexing? Explain different types of Multiplexing. **10**

OR

What do you mean by redundancy with respect to Error Control Techniques? Explain. **10**

UNIT III

5. Differentiate between Adaptive and Non – Adaptive routing algorithm. Explain flooding. **10**

OR

What is Switching? What are the different types of Switching Techniques? Explain. **10**

UNIT IV

6. Differentiate between TCP/IP and OSI reference models in detail. **10**

OR

Explain the following:

4+3+3

- (i) DHCP
- (ii) Bluetooth
- (iii) POP3
