BCA (Sem. IV)

# BCA Fourth Semester Examination May - 2016

## (Faculty of Science)

## FIRST PAPER

## Data Structure and Algorithms

Paper Code 4611

**Time Allowed: Three Hours** **Maximum Marks**

*No supplementary answer book will be given to any candidate. Hence the candidates should write 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) internal choice.**

PART-I

1. Answer any 10 questions. Each question carries 1 mark.
(Words limit upto 20 words each)
   a) What is Abstract Data Type ?
   b) What do you mean by Complexity ?
   c) What is Linear Data Structure ?
   d) Write down the application of Stack.
   e) Write down the traversing method of a binary data tree.
   f) What is the difference between linear search and binary search ?
   g) Define Sorting.
   h) What do you mean by Hash Searching ?
   i) Write difference between Internal and External Sorting.
   j) What is Dequeue ?
   k) What do you understand by the term Pointer Array.
   l) What is Isolated Vertex ?

2. Attempt all questions. Each question carries 5 marks.
(Word limit upto 50 words each)
   a) Explain Pattern Matching Algorithm.
   b) Explain about Polish Notation.
   c) What is Priority Queue ? Write their applications.
   d) State in detail the traversing technique of graph.

## PART-II

### UNIT I

3. Write short note on : 4+3+3
   a) Big 'O' Notation
   b) Data Types
   c) Array Representation in Memory

OR

What is Algorithm ? Write down their characteristics. 10

### UNIT II

4. Explain about linked list representation stack. 10

OR

How stack is used in the conversion of Infix expression into post fix expression? Give an example. 10

### UNIT III

5. Write short note on : 4+3+3
   a) Height of a tree
   b) Binary Search Tree
   c) Circular Queue

OR

Explain the representation of binary tree in memory. 10

### UNIT IV

6. Explain the warshall algorithm. 10

OR

What do you mean by Hasting Function ? How do you remove the collision, if it occurs ? 10

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# BCA Fourth Semester Examination May - 2016

## (Faculty of Science)

## SECOND PAPER

## PHP Programming

Paper Code :4621

Time Allowed: Three Hours

Maximum Marks : 75

*(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

10x1=10

1. Answer any 10 questions. Each question carries 1 mark.
(Words limit upto 20 words each)

a) Write different features of PHP.

b) Give the names of different data types available in PHP.

c) Define various jump statements in PHP.

d) How can we create a string in PHP. Give an example.

e) What is a Function ? In how many ways can you call a function ? (Give names only)

f) What is an Array ? Give names of different type of arrays.

g) What do you means by Cookies ?

h) What is $_Post Variable ?

i) Write the difference between Exception and Error.

j) What is File ?

k) What is Session ?

l) Write the names of operations which you can perform on database.

4x5=20

2. Answer any 4 questions. Each question carries 5 marks.
(Words limit upto 50 words each)

a) Explain the basic syntax of PHP with an example.

b) Explain the variable scope in PHP with example.

c) What do you mean by a User Defined Function ? Create a user defined function to justify your answer.

d) What is an Exception ? How can you handle an exception ? Give an example.

e) Explain the function fopen ( ) and fclose ( ) to handle a file.

## PART-II

## UNIT I

3. Explain the various types of Loop statements supported by PHP.

OR

Explain different types of operators available in PHP with example.

## UNIT II

4. Explain the following string function. 2½ x 4=
   (i) Strstr ( )
   (ii) StrPoS ( )
   (iii) SubStr-Count ( )
   (iv) Str-replace ( )

OR

In how many ways can you pass parameters to a function ? Explain each with an example.

## UNIT III

5. Write a script that uses cookies to remember how long ago a visitor first visited the page. Display this value in the page, in minutes and seconds.

OR

What is PHP Error Handling ? Explain the die ( ) function and trigger_error ( ) function to handle an error.

## UNIT IV

6. Write out a SQL statement that creates a table called **member** in your mydatabase to store information about the members of a book club. Store the following data for each person: First name, Last name, age and the date they joined the club. Create more SQL statements to insert five imaginary people into this table.
   (i) Jo Scrivener, aged 31, joined September 3, 2006.
   (ii) Marty Pareene, aged 19, joined January 7, 2008.
   (iii)Nick Blakeley, aged 30, joined August 19, 2010
   (iv)Bill Swan, aged 20, joined June 11,2011.
   (v) Jane Field, aged 36, joined March 2012.

OR

Explain the following function.
(i) fgetc ( )
(ii) Unlink ( )
(iii) is- exists ( )
(iv) rename ( )
(v) touch ( )

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# BCA Fourth Semester Examination May - 2016

## (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 upto 20 words each)
   a) What is Serilizability ?
   b) What is Integrity of Data ?
   c) What is Deadlock ?
   d) What do you mean by a Transaction ?
   e) What is Multiple Granularity ?
   f) What is OID ?
   g) What is PL/SQL ?
   h) What do you mean by a Distributed Database ?
   i) What is Client-Server Architecture ?
   j) What are Parallel Databases ?
   k) What is Persistent Programming Language ?
   l) What is Composite Data Type in PL/SQL ? Give an example.

2. Attempt all questions. Each question carries 5 marks. 4x5=20
(Word limit upto 50 words each)
   a) What is Locking ? How locking is helpful in Concurrency Control ?
   b) Explain the concept of inheritance in SQL.
   c) Explain 2-phase commit protocol.
   d) Explain the skeleton of a PL/SQL program.

## PART-II

### UNIT I

3. (a) What is Concurrency Control ? Explain Time Stamp based protocol. 10

OR

(b) With the help of a neat diagram explain different states of a transaction. Also explain ACID properties of a transaction. 10

### UNIT II

(a) What are Object-based Databases ? Explain in detail. Also discuss Complex Data types. 10

OR

(b) What do you mean by Database System Architecture ? Explain different types of Database System Architecture. 10

### UNIT III

(a) How a global transaction can be handled in a Distributed Databases ? Explain in detail with a neat diagram. 10

OR

(b) What are the advantages of using Parallel Databases ? Differentiate between Intra-Operation Parallelism and Inter-Operation Parallelism in detail. 10

### UNIT IV

What are Triggers ? Explain different types of triggers. Also discuss advantages of using triggers. 10

OR

(b) What are Cursors ? Why we use them ? How an explileit cursor can be defined and used ? Give an example. 10

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May - 2016

FOURTH PAPER

# Data Communication and Net Working

Paper Code : 4641

**Time Allowed: Three Hours** **Maximum Marks : 75**

*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 marks. 10x1= 10
(Words limit upto 20 words each)

a) What do you mean by a Network ?

b) How will you classify networks on the basis of scale.

c) What is Internet ?

d) What is the difference between half duplex and full duplex transmission modes ?

e) What do you mean by a protocol ?

f) What is the function of ISO ?

g) Write the full form of IEEE.

h) Name the two protocols used in application layer.

i) What do you mean by Error Control ?

j) What is Internet-Protocol (IP) ?

k) What is the function of a bridge ?

l) Name the different sections in which DNS is divided.

Attempt all questions. Each question carries 5 marks. 4x5=20
(Word limit upto 50 words each)

a) What do you understand by Network Architecture ?

b) What are the functions of Data Link Layer ?

c) Explain in brief wireless LAN protocols.

d) Explain the working of SMTP.

P.T.O

## PART-II

### UNIT I

3. Explain the following types of topologies : 10
(i) Ring (ii) Mesh (iii) Bus (iv) Star

**OR**

Explain different types of transmission modes with relevant examples. 10

### UNIT II

4. With a neat and clean diagram explain in detail the OSI model. 10

**OR**

Differentiate between guided and unguided transmission medium. Explain twisted pair, coaxial cable and optical fiber as guided transmission mediums. 10

### UNIT III

5. What do you mean by network connectivity in WAN's? Explain the different types of switching techniques. 10

**OR**

What are Congestion Control Algorithms ? Explain congestion control in virtual circuit subnets and datagram subnets. 10

### UNIT IV

6. Explain TCP/IP protocol architecture ? How this architecture differs from OSI reference model ? 10

**OR**

Write short notes on any two of the following. 2x5= 10
(i) TELNET Protocol.
(ii) File Transfer Protocol.
(iii) Wi-Fi Network

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