

**BCA Third Semester Examination-Dec.2014****FIRST PAPER****Data Base Management System**

Paper Code:-3611

**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. One complete question should not be answered at different places 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 upto 20 words each)**

- a) Define Schema and Subschema.
- b) What do you mean by Physical Database Independence?
- c) What is Database Integrity?
- d) What are the security needs of the Database?
- e) What do you mean by a Relation?
- f) What are the responsibilities of Database Administration?
- g) What is the need for normalization of data?
- h) Why SQL is a Database Query Language.
- i) Name the different data types available in SQL.
- j) What do you mean by Triggers?
- k) Explain the term Indexes.
- l) How the file system is different from database system.

**2. Answer all the questions. Each question carries 5 Marks.****4x5 = 20****(Words limit upto 50 words each)**

- a) What are Functional Dependency Preservations? Write a note on Access Control.
- b) Write a note on Aggregate Functions.
- c) Differentiate between the following:-
  - (i) DML and DDL
  - (ii) Inner Join and Outer Join.
- d) Explain different types of users in Database.

## Part-II

### Unit-I

3. What are different levels of Database Architecture? Describe conceptual level in detail.

OR

Compare and contrast the three data models with respect to their structure and implementation.

### Unit-II

4. Explain the difference between Relational Algebra and Relational Calculus.

OR

Write short note on:-

- (i) Generalization
- (ii) Loss less decomposition

### Unit-III

5. Describe the different steps in the design of a Relational Database. Discuss also its Pitfalls.

OR

What do you mean by Functional Dependency? Write and prove the following rules of Functional Dependency:-

- (i) Transitivity Rule
- (ii) Union Rule

### Unit-IV

6. Write the commands in SQL for the following:-

- (i) View
- (ii) Null
- (iii) Update a record
- (iv) Exists
- (v) Display a record having maximum value of a field.

OR

Consider the following database:-

EMP (Emp no#, Empname, Manager, DNO, Salary, Age) Dept (D NO., D name , Floor)

Write the following queries in SQL.

- (i) Find the names of employee that begin with G or E.
- (ii) Print or list the names and average salary of each department.
- (iii) Write a command to create EMP table, where EMP no. # is primary key and DNO as foreign key.

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**BCA Third Semester Examination-Dec.2014**  
(Faculty of Science)

**SECOND PAPER**

**Advance Java Programming**

Paper Code :3621

**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. One complete question should not be answered at different places 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 carry equal 1 mark.

10x1= 10

(Words limit upto 20 words each)

- What is Object Oriented Programming?
- What is Polymorphism?
- Describe Static Keyword.
- How to create a Package?
- What is Thread?
- Differentiate between String class and String Buffer Class.
- How do applets differ from application program?
- What do you mean by layout Managers?
- Write the syntax to draw the arc in an Applet.
- What are the two major components of JDBC?
- What is JDBC Driver Interface?
- What packages are used by JDBC?

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

4x5=20

(Word limit upto 50 words each)

- Describe Left Shift and Right Shift operators with examples.
- How can you make the JDBC connection?
- Explain the Event Delegation Model.
- Describe the following method related to String
  - replace( )
  - compareTo( )
  - charAT( )

P.T.O

## PART-II

### UNIT I

3. Write a program to search a number in an array. 10

OR

- (a) What is Garbage Collection in Java? 5  
(b) What are Command Line Arguments? How are they useful? 5

### UNIT II

4. Describe Dynamic Method Dispatch with suitable example. 10

OR

- (a) What is the difference between Multiprocessing and Multithreading? What is to be done to implement these in a program? 5  
(b) Discuss the various levels of Access Protection available for packages and their implication. 5

### UNIT III

5. Write an Applet Program that accepts two input string using <param> tag and concatenate the strings and display in status window. 10

OR

Describe the different stages in the life cycle of an Applet. Distinguish between `init()` and `start()` method. 10

### UNIT IV

6. What is JDBC? Explain two-tier and three-tier Client Server Model. 10

OR

Explain types of JDBC Drivers. 10

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# BCA Third Semester Examination- Dec.2014

## THIRD PAPER

### OPERATING SYSTEM FUNDAMENTALS

Paper Code : 3631

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. One complete question should not be answered at different places 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. Attempt any 10 questions out of the following. Each question carries 1 mark.

10x1=10

(Words limit upto 20 words each)

- What is Batch Processing ?
- Define Turn-Around Time ?
- What is Thread ?
- What is Page Fault ?
- Define Race Condition ?
- What is Deadlock ?
- What is Process Control Block ?
- What is Spooling ?
- What is Co-Operative Process ?
- What is meant by Context Switch ?
- What is the Inter Process Communication ?
- Define Through put .

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

4x5=20

(Words limit up to 50 words each)

- What is the purpose of System Call ?
- Explain Contiguous Memory Allocation .
- What are the different accessing methods of a file ?
- What is Access Matrix ?

P.T.O.

## PART II

### Unit I

3. Briefly explain the four major functions of an Operating System .

OR

What is Critical Section Problem and explain Two Process Solutions and Multiple Process Solutions ?

### Unit II

4. What are the various Page Replacement Algorithms used for page replacement ? Explain.

OR

- (i) Explain about Virtual Memory Concept with neat diagram.
- (ii) Explain about Demand Paging with example.

### Unit III

5. How can Deadlock be avoided ? Explain Banker's Algorithm with an example ?

OR

Discuss about:-

- (i) Free Space Management
- (ii) File-System Structure

### Unit IV

6. Write notes about Disk Management and Swap-Space Management.

OR

Write short notes on:-

- I. Goal of Protection
- II. Domain of Protection

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(Sem. III)

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# BCA Third Semester Examination- Dec.2014

## FOURTH PAPER

### SYSTEM ANALYSIS & DESIGN

Paper Code: 3641

Time Allowed: Three Hours

Maximum Marks : 70

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

All the parts of one question should be answered at one place in the answer book. One complete question should not be answered at different places 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

(word limit up to 20 words each)

- What is a System ?
- What is Analysis ?
- What is Interpersonal Communication System?
- What is Interface ?
- Who is the System Analyst ?
- What is System Planning ?
- What is the need of information ?
- What is the information gathering ?
- Define the structured English ?
- What is system testing ?
- What is Documentation ?
- What is Make v/s Buy decisions?

4x5=20

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

(word limit up to 50 words each)

- Describe the characteristics and elements of a system ?
- What is Feasibility study ? Describe different type of feasibility study.
- Describe the Data flow diagram.
- Differentiate between verification and validation.

P.T.O.

## PART-II

### Unit I

3. Describe the different phases of SDLC.

**OR**

- a) Explain the Management Information System.
- b) Explain the Decision Support System.

### Unit-II

4. What is project planning ? Describe steps involved in project planning.

**OR**

Define the following:

- a) Onsite Observation
- b) Fact Analysis
- c) Performance Analysis

### Unit-III

5. Explain the various tools of structured analysis.

**OR**

What do you mean by Interview and questionnaire? Explain it.

### Unit-IV

6. What is Testing ? Describe white box and black box testing.

**OR**

- a) What are Input Design and Output Design? Explain.
- b) What are the requirements of Form Design?

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