BCA Third Semester Examination - Dec.2016
FIRST PAPER
Data Base Management System
Paper Code: 3611

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. Attempt any 10 questions out of the following. Each question carries 1 mark.   10x1=10
   (Words limit up to 20 words each)
   a. Differentiate between logical and physical view of data.
   b. What are five functions of a database administrator ?
   c. What is Meta Data ?
   d. What do you mean by Functional Dependency ?
   e. Write steps to drop a column of a table.
   f. What is the difference between Primary Key and Candidate Key ?
   g. What is an Access Control ?
   h. Name the different data types available in SQL.
   i. Explain "like" clause with an example.
   j. What is Generalization ?
   k. What is the significance of NULL values ?
   l. What is a Transaction ?

2. Attempt all questions. Each question carries 5 marks.   4X5=20
   (Words limit up to 50 words each)
   a. Differentiate between File System and Database System.
   b. What is Aggregation ? Write down four aggregate functions of SQL.
   c. Explain states of transition with diagram.
   d. Explain any four DML commands with examples in SQL.

P.T.O.

Part-II

Unit- I

3. What do you mean by Database Structure ? Explain its architecture working components ?　　10

OR

Differentiate Hierarchical, Network and Relational Models.　　10

Unit- II

4. Describe E-R diagram with notations. Draw an E-R diagram for Banking Management System.　　10

OR

What is Relational Algebra ? Explain types of operations performed in relational algebra.　　10

Unit- III

5. What is the need of Normalization ? Explain types of normal forms.　　10

OR

Write short note on the following :　　10
   a. Functional Dependency
   b. Loss less Decomposition

Unit- IV

6. What are characteristics of SQL ? Explain types of joins with suitable examples.　　10

OR

Write the commands in SQL to perform the following operations :　　5x2
   a. Create table of student with Primary Key.
   b. Modify structure by adding one more column.
   c. Update a record
   d. Display student names starting with letter 'A'.
   e. Display total values of a field.

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BCA Third Semester Examination,Dec.-2016
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.*

(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) Define Portability feature of Java.

   b) Define Dynamic feature of Java.

   c) List two features of C++ that were removed from Java ?

   d) List various types of tokens supported by Java.

   e) What are Command Line Arguments ?

   f) What is Type Casting ?

   g) The following code results in compile time error. Identify the error.

   Public static void display (x)

   ```
   {
           int y;
           If (x >10)
           {
             y= x;
           }
           System.out.println("y=" +y);
   }
   ```

   h) List any two categories in which Java Operator can be classified.

   i) The following is a segment of a program

   ```
   X=1;
   Y=1;
    If (n>0)
    X= x +1;
    Y=y-1;
   ```
   What will be the values of x and y if n assumes a value of 1.

   j) What are Objects ?

   k) What is a Package ?   **P.T.O.**

2. **Answer all the questions. Each question carries 5 marks.**
   (Words limit up to 50 words each)
<div align="right">4x5 = 20</div>

   a) Compare and contrast Overloading and Overriding methods.
   b) What is an Interface? What is the major difference between Interface and Class.
   c) How do applets differ from application programs?
   d) Describe the major tasks of input and output stream classes.

Part-II

Unit-I

3. What is Object Oriented Programming System? What are the features of Java? Write in detail. **10**

OR

   (a) Given a number, write a program using while loop to reverse the digits of the number. **5**
   (b) What is a Constructor? What are its special properties ? **5**

Unit-II

4. What is a Thread? How do we start a thread? Mention one method to stop threads. Also give difference between suspending and stopping a thread. **10**

OR

   What is an Exception? How try and catch block is defined ? Also mention most common types of exceptions that might occur in Java. **10**

Unit-III

5. What are Java Applets and their life cycle? Explain. **10**

OR

   Write applets to draw Lines, Rectangles, Circles and Ellipses. **10**

Unit-IV

6. What do you mean by JDBC and its drivers? Explain its types. **10**

OR

5+5

   (a) Write short note on:
   (i) Java.lang
   (ii) Java.util
   (b) Write the steps to connect the database in Java with example.

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BCA Third Semester Examination, Dec.-2016
FIRST 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.

(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) Write any five System Calls and explain their use.

   b) What is the function of Operating System ?

   c) What is a Process ? Explain.

   d) Differentiate between Horizontal & Vertical Fragmentation.

   e) Describe Segmentation.

   f) Discuss Demand Paging.

   g) Write the conditions for Deadlock.

   h) Explain Critical Section Problem.

   i) Describe File System Structure.

   j) Discuss the Structure of Disk.

   k) What is the domain of protection ?

   l) Write a note on revocation of access rights.

2. Answer all the questions. Each question carries 5 marks.   4x5 = 20
   (Words limit up to 50 words each)
   a) Explain different types of Operating Systems.

   b) Differentiate between Physical and Logical Address Space.

   c) What is the use of Precedence Graph ? Explain with example.

   d) How is Swap – Space management done ?

Part-II

Unit-I

3. Describe different types of schedulers. 10

OR

Explain scheduling algorithms with suitable examples. 10

Unit-II

4. What is the need of Virtual Memory ? Explain the techniques of virtual memory management. 10

OR

Describe page replacement algorithms. 10

Unit-III

5. Write the method of deadlock detection and recovery. 10

OR

Explain how Inter-process Communication is done. 10

Unit-IV

6. Explain different Disk Scheduling techniques. 10

OR

How is Access Matrix created ? Explain with example. 10

BCA Third Semester Examination, Dec.-2016
FOURTH PAPER
System Analysis & Design
Paper Code:- 3641

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) What is System Analysis ?

    b) What do you mean by Algorithm ?

    c) What is Top Down Analysis and Design ?

    d) What do you mean by Data Flow Diagram (DFD) ?

    e) What is Decision Support System ?

    f) What do you mean by Information System ?

    g) What do you mean by Feasibility Study ?

    h) What is Decision Tree and Structured English ?

    i) What is System and Unit Testing ?

    j) What is Test Case in Testing ?

    k) What is the difference between Verification & Validation ?

    l) What do you understand by Security of a System ?

2. **Answer all the questions. Each question carries 5 marks.**   **4x5 = 20**
    (Words limit up to 50 words each)
    a) What is Formal & Informal Information System ?

    b) What do you mean by DFD ? Why we use them ?

    c) What is Unit & Integrated Testing ?

    d) What do you mean by Prototyping ?

                                                                                 P.T.O.

Part-II

Unit-I

3. What is SDLC ? Explain each phase of SDLC with example. 10

OR

What is a System ? Explain the different types of systems (each) with example. 10

Unit-II

4. What is Feasibility Study ? What are the steps of Feasibility Analysis ? Explain different types of feasibility (each). 10

OR

What is System Planning and Initial Investigation ? What strategies are used for determining information requirement ? 10

Unit-III

5. Explain the different information gathering tools with its advantages. 10

OR

Draw an overall data flow diagram for the following applications : 10
(a) Making out loans
(b) A travel agency making round-trip reservations for Jaipur to Mumbai
(c) A system analyst selling professional time by the hour and paying staff salaries
(d) Ordering supplies for a Departmental Shop.

Unit-IV

6. What do you mean by Testing ? Explain the types of Testing & its characteristics. Explain the implementation, Planning & Conversion Techniques. 10

OR

What is Input / Output and Forms Design ? What is the requirements of the forms design ? 10

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