

No. of Printed Pages : 03

Roll No.

C-211

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-201-B

PROGRAMMING LANGUAGES

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-09/14)M-C-211

P.T.O.

Unit I

1. Explain various programming language translators. **15**
2. Differentiate between : Assignment and initialization; type checking and type conversion; syntactic and semantic rules. **15**

Unit II

3. Write a note on declaration and type checking of data structure. **15**
4. Describe the following concepts with suitable examples :
Abstract data types, data hiding and encapsulation. **15**

Unit III

5. Write a note on recursive subprograms. **15**
6. Explain static and dynamics scope with suitable example. **15**

Unit IV

7. Explain stack based storage management. **15**
8. Differentiate C and C++ Programming Languages. **15**

Unit IV

7. (a) Differentiate Static and Dynamic RAM. **5**
- (b) What is associative memory ? Derive match logic for one word of associated memory. **10**
8. Write and explain any *seven* features of Android platform for mobile devices. **15**

No. of Printed Pages : 04

Roll No.

C-212

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-203-B

COMPUTER SYSTEM ARCHITECTURE

Time : 3 Hours]

[*Maximum Marks : 75*

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Each question carries equal marks.

Unit I

1. (a) List the characteristics Von-Neuman model also explain stored program concept. **10**
(b) Define a micro operation. Write different types of shift micro-operations. **5**
2. (a) Represent the following conditional control statement by two register transfer statements with control functions : **8**
if (P = 1) then ($R_1 \leftarrow R_2$) else if (Q = 1) then ($R_1 \leftarrow R_3$)
(b) What are constituents of a common bus system ? How data movement takes place using common bus system ? **2,5**

Unit II

3. What is the need of different types of addressing mode ? Explain *five* different types of addressing modes supported by a computer along with their application areas. **15**

4. What is the difference between hardwired and microprogrammed control unit ? Write the merits and demerits of each. Is it possible to have a hardwired control associated with a control memory ? **15**

Unit III

5. Discuss the following modes of data transfer : **15**
(a) Programmed I/O
(b) Interrupt Initiated I/O.
6. (a) Write at least six status conditions for setting the individual bits in the status register of an asynchronous communication interface. **12**
(b) Name three different types of ports. **3**

8. (a) What are the various causes of database failures ?
- (b) Discuss, how serializability is used to enforce concurrency control in a database system.

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Roll No.

C-213

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-205-B

FUNDAMENTALS OF DATABASE
MANAGEMENT SYSTEM

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Discuss various advantages and disadvantages of DBMS. What are various components of DBMS environment ?
2. Write short notes on the following :
 - (a) DBA
 - (b) Relational Databases
 - (c) DBMS users.

Unit II

3. (a) Describe the architecture of database system with the help of diagram.
(b) Explain physical and logical data independence also by giving some suitable example.
4. Discuss different Models i.e. Record-based data model and Object-based data model.

Unit III

5. What is Normalization ? Explain by giving definition and with examples 1NF, 2NF, 3NF and BCNF.
6. Define the following terms :
 - (a) Entity
 - (b) Entity Set
 - (c) Degree of a relation
 - (d) Key
 - (e) Super Key
 - (f) Primary Key
 - (g) Prime Attribute
 - (h) Database Schema.

Unit IV

7. (a) Discuss the atomicity, durability and consistency preservation properties of a database transaction.
(b) Describe the basic techniques to implement database recovery in a DBMS.

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Roll No.

C-214

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-207-B

DATA STRUCTURES

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-09/18)M-C-214

P.T.O.

Unit I

1. Define Data Structures. Explain complexity of algorithm and time-space tradeoff with example.
2. Describe the following :
 - (a) Data Structure Operations
 - (b) Applications of Data Structures.

Unit II

3. Write the algorithm for traversing, searching and deleting item from circular header list.
4. Explain bubble sort algorithm with example.

Unit III

5. Write the steps for converting following infix expression into equivalent postfix expression :
$$Q : ((A + B) * D) \uparrow (E - F)$$
6. Explain insertion and deletion of an item from Queue.

Unit IV

7. Explain the following :
 - (a) Binary tree and complete binary tree
 - (b) Traversing binary tree
 - (c) Threads.
8. Explain sequential representation of graphs, adjacency matrix and path matrix.

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Roll No.

C-215

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-209-B

INFORMATION SYSTEM ANALYSIS AND
DESIGN

Time : 3 Hours]

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Write notes on the following : **15**
 - (a) Open vs. Closed system
 - (b) Physical vs. Abstract system.
2. Explain Spiral model for system development.
List its advantages and disadvantages. **15**

Unit II

3. Explain the steps for determining user requirement for software system. **15**
4. Draw the DFD of library management system taking the suitable assumptions. **15**

Unit III

5. What are the Input and Output design of a system ? **15**
6. Explain cost benefit analysis techniques. **15**

Unit IV

7. What is Quality Assurance ? Explain the goal and levels of Quality Assurance. **15**
8. What is System Testing ? Explain the testing techniques. **15**