C-211

B.C.A. EXAMINATION, Dec. 2018

(Third Semester)

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

(BCA)

BCA201B

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.

Unit I

1. Differentiate between the following :

   (a) Variables and constants **8**

   (b) Assignment and initialization. **7**

2. Draw comparison between translator, compiler and interpreter with the help of an example.

   15

Unit II

3. (a) Define and explain abstract data types.

   5

   (b) Explain encapsulation and information hiding in subprograms and programmer defined data types. **10**

4. (a) Distinguish between the a vector and a multi-dimensional Array. **5**

   (b) Discuss the implementation of sets. **10**

Unit III

5. (a) Explain subprogram sequence control in a recursive subgrogram. **8**

   (b) Differentiate between static and dynamic scope. **7**

6. Define exceptions and explain the working of exception handlers with the help of an example.

   15

Unit IV

7. Write short notes on the following :

   (a) Heap storage management **8**

   (b) Procedural and non-procedural languages.

   7

8. Describe programmer and system controlled storage management and phases in detail. **15**

C-212

B.C.A. EXAMINATION, Dec. 2018

(Third Semester)

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

(BCA)

BCA203B

COMPUTER SYSTEM ARCHITECTURE

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. Each question carries equal marks.

Unit I

1. Define a computer bus. What are different parts of a common bus ? Design a 16 bit common bus using multiplexers. **15**

2. (a) List different categories of micro-operations supported by a basic computer. Give suitable examples of each category. **10**

    (b) Explain the stored program concept. **5**

Unit II

3. Draw and explain the instruction execution cycle for a basic computer. **15**

4. Differentiate between : **15**

    (a) Hardwired and microprogrammed control unit

    (b) Direct and indirect addressing mode

    (c) Register reference and memory reference instructions.

Unit III

5. What is the difference between synchronous and asynchronous data transfer ? Explain the handshaking asynchronous data transfer scheme. **15**

6. Explain the process of DMA. **15**

Unit IV

7. (a) Differentiate Static and Dynamic RAM. **5**

    (b) What is associative memory ? Derive match logic for one word of associative memory. **10**

8. (a) Write the advantages and disadvantages of write through and copy back schemes for cache. **6**

    (b) What do you mean by locality of reference ? What are its types ? Explain each briefly. **9**

C-213

B.C.A. EXAMINATION, Dec. 2018

(Third Semester)

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

(BCA)

BCA205B

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. What are the advantages of DBMS approach for data storing ? Explain in detail. **15**

2. Discuss the components of DBMS with the functions of each. **15**

Unit II

3. What are various elements of E-R Model. Explain with example of each. Also give the symbols used for each one of them. **15**

4. (a) What is data independence ? What are its types ? Why is it important ? **7**

(b) Discuss object based data models in briefs. **8**

Unit III

5. (a) Explain the difference between specialization and generalization with example of each. **7**

(b) What are various types of relationship on the basis of mapping constrants ? Explain with examples of each. **8**

6. (a) What do you mean by integrity constraints ? What are various integrity constraints applicable to relational model ? **7**

(b) Does the word "relational" in relational model have any relevance the mathematic relations ? Justify your statement. **8**

Unit IV

7. What do you mean by database recovery ? Why is it needed ? Discuss the various methods of database recovery. **15**

8. Explain the various ways of data distribution in distributed DBMS in detail. **15**

C-214

B.C.A. EXAMINATION, Dec. 2018

(Third Semester)

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

BCA

BCA207B

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.

Unit I

1. Define Data Structures. Describe different types of data structures with examples. **15**

2. Explain Algorithm complexity and time-space tradeoff. **15**

Unit II

3. Describe different operations on an Array. **15**

4. Describe the following : **5×3=15**
   (a) Sparse Array
   (b) Garbage Collection
   (c) Application of link list.

Unit III

5. Describe polish notation and conversion with suitable example. **15**

6. Write short notes on the following : **5+5+5=15**
   (a) Recursion
   (b) Deques
   (c) Deletion in Circular Queue.

Unit IV

7. Describe breadth first and depth first algorithm. **15**

8. Write short notes on the following : **7+8=15**
   (a) Binary tree traversal
   (b) Warshall's Algorithm.

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B.C.A. EXAMINATION, Dec. 2018

(Third Semester)

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

(BCA)

BCA209B

INFORMATION SYSTEM ANALYSIS AND DESIGN

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. (a) Differentiate between : **10**

    (i) Physical and Abstract System

    (ii) Open and Closed System.

    (b) What is System ? Explain its characteristics. **5**

2. Explain System Development life-cycle. **15**

Unit II

3. (a) Explain, how planning is done by system analyst in a system. **8**

    (b) What is decision table and decision tree ? Explain them with advantages and disadvantages. **7**

4. (a) Explain feasibility analysis with its type. **10**

    (b) Explain IPO, HIPO and Gantt chart. **5**

Unit III

5. Define Input/Output in System design. Also explain how to represent information using Input/Output. **15**

6. Explain cost and benefit analysis. Determining the procedure for cost and benefit determination of a system. **15**

Unit IV

7. (a) What is Quality Assurance ? Explain the level of quality assurance. **7½**

    (b) Explain various factors which reduce software maintenance cost. **7½**

8. What is Testing ? Explain various testing techniques used for testing the system. **15**