GK—08—2023

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper BCA-404-B

(Computer Graphics)

(Thursday, 20-4-2023)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours   *Maximum Marks—75*

N.B. :—   (*i*)   *All* questions are compulsory.

    (*ii*)   Figures to the right indicate full marks.

    (*iii*)   Assume suitable data, if required.

    (*iv*)   Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1.   Attempt any *five* of the following (**3** marks each) :   15

(*a*)   Discuss advantages of computer graphics.

(*b*)   Discuss Digital Differential Algorithm.

(*c*)   Explain Segment naming scheme.

P.T.O.

(*d*)　　Discuss Simple modeling.

(*e*)　　Discuss Ground rules for graphics s/w design.

(*f*)　　Explain 2-D clipping.

2.　Attempt any *three* of the following (**5** marks each) :　15

(*a*)　　What is Rotation ? Explain in detail.

(*b*)　　Explain Midpoint subdivision algorithm.

(*c*)　　Explain Graphical user interface.

(*d*)　　Discuss Windowing function.

(*e*)　　Discuss two-dimensional transformation.

3.　Attempt any *three* of the following (**5** marks each) :　15

(*a*)　　What is Geometric Modelling ? Explain.

(*b*)　　Explain functions for segmenting display file.

(*c*)　　Discuss Graphics Primitives.

(*d*)　　Explain Polygon clipping algorithm.

(*e*)　　Discuss Line and Line Segment.

4.　Attempt any *three* of the following (**5** marks each) :　15

(*a*)　　Explain Color CRT monitors.

(*b*)　　Explain Scaling.

(*c*)　　Discuss End point codes.

    (*d*)   Discuss application areas of Computer Graphics.

    (*e*)   Discuss a graph plotting program.

5.   Write short notes of any *three* of the following (**5** marks each) :   15

    (*a*)   Joystick

    (*b*)   Default error conditions

    (*c*)   Symbols and instances

    (*d*)   Direct View Storage Tube

    (*e*)   Reflection.

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GK—24—2023

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper BCA-402

(Data Structure and Algorithm)

(Wednesday, 26-4-2023)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours   *Maximum Marks—*75

N.B. :—   (*i*)   *All* questions are compulsory.

     (*ii*)   Figures to the right indicate full marks.

     (*iii*)   Assume suitable data, if required.

     (*iv*)   Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1.   Attempt any *five* of the following (**3** marks each) :   15

(*a*)   What is Data Structure ? Explain.

(*b*)   Explain the concept of algorithm.

(*c*)   What is Array ? Explain.

                                    P.T.O.

(*d*)   What is Selection Sort ? Explain.

(*e*)   Explain the concept of Stack.

(*f*)   What is Queue ? Explain.

(*g*)   Explain the concept of Threads.

2.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Explain time space tradeoff of algorithm.

(*b*)   Discuss the representation of linear array in memory.

(*c*)   Explain binary search algorithm in detail.

(*d*)   Describe in brief Bubble sort algorithm.

(*e*)   What is Linked List ? Explain.

3.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Explain the concept of Garbage collection.

(*b*)   Write an algorithm for deletion in linked list.

(*c*)   Describe the concept of Array representation of stacks.

(*d*)   Explain the concept of Deques in detail.

(*e*)   What is Binary tree ? Explain.

4.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Describe in brief algorithm for Traversing of binary tree.

(*b*)   Explain Header Nodes in detail.

    (*c*)   Write an algorithm for inserting element in Linear array.

    (*d*)   Explain algorithm for Searching a linked list.

    (*e*)   Explain the concept of Recursion.

5.   Write short notes on any *three* of the following (**5** marks each) :   15

    (*a*)   Priority queue

    (*b*)   Types of Binary tree

    (*c*)   General Tree

    (*d*)   Memory Representation of Queues

    (*e*)   Arithmetic expression.

This question paper contains **3** printed pages]

GK—07—2023

FACULTY OF SCIENCE

BCA (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER APPLICATION

(Operational Research)

(Thursday, 20-4-2023)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours   *Maximum Marks—75*

N.B. :— (i)   *All* questions are compulsory.

　　　　(ii)   Figures to the right indicate full marks.

　　　　(iii)   Assume suitable data, if necessary.

1.   Write short notes on (any *five*) :   15

(a)   Explain the objectives of OR.

(b)   Explain the decision-making of OR.

(c)   Explain the simplex method in OR.

(d)   Explain Savage.

(e)   Discuss Laplace decision model.

P.T.O.

(*f*) Advantage of decision theory.

(*g*) Explain the steps of programming process.

2. Answer any *three* of the following : 15

(*a*) Explain the scope of OR.

(*b*) Explain the structure model of OR.

(*c*) Discuss the characteristics of a Good Model.

(*d*) Explain the types of Mathematical Model.

3. Answer any *three* of the following : 15

(*a*) Explain the role of computer in OR.

(*b*) Write the disadvantage of OR.

(*c*) Explain the standard form of LPP.

(*d*) How to require for LPP ?

4. Answer any *three* of the following : 15

(*a*) Explain the classification schemes of model.

(*b*) Write the rules for game theory.

(*c*) Explain the maximax criterion with example.

(*d*) Discuss the Hurwicz criterion in detail.

5. Answer any *three* of the following : 15

   (*a*) Explain network construction in PERT and CPM.

   (*b*) Discuss the Partial Dependency.

   (*c*) Discuss the Numbering the events.

   (*d*) Explain the updation of PERT and CPM.

This question paper contains **3** printed pages]

GK—15—2023

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper BCA-401

(Programming in Java)

(Monday, 24-4-2023)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours   *Maximum Marks—75*

N.B. :— (*i*)   *All* questions are compulsory.

(*ii*)   Figures to the right indicate full marks.

(*iii*)   Assume suitable data, if required.

(*iv*)   Use of any electronic media such as mobile phone, digital diary
and electronic calculator is not permitted.

1.   Attempt any *five* of the following (**3** marks each) :   15

(*a*)   Discuss Java Variables, Constants with example.

(*b*)   Explain the use of 'this' Keyword.

(*c*)   Discuss Finally clause.

P.T.O.

    (*d*)   Discuss importance of Static Members.

    (*e*)   What is Array ? How do you declare array in Java ? Explain.

    (*f*)   Discuss the concept of method overriding.

    (*g*)   Discuss how Java differs from C++.

2.   Attempt any *three* of the following (**5** marks each) :   15

    (*a*)   Discuss the structure of Java Program with suitable example.

    (*b*)   Discuss the concept of Visibility controls.

    (*c*)   What is Interface ? How do you define and implement interface in Java ?

    (*d*)   Explain any *two* string methods in Java with syntax and suitable example.

    (*e*)   Write a Java program to find largest of 3 numbers.

3.   Attempt any *three* of the following (**5** marks each) :   15

    (*a*)   Discuss Passing Parameters to an Applet with suitable example.

    (*b*)   What is Package ? How do you create and access package ?

    (*c*)   What is Constructor ? Discus types of Constructor.

    (*d*)   Explain working of JVM.

    (*e*)   Write a Java program to print Floyd's triangle.

4.   Attempt any *three* of the following (**5** marks each) :   15

    (*a*)   Explain StringBuffer class in Java.

(*b*) Explain various Jumping Statements in Java with example.

(*c*) Explain method overloading with suitable example.

(*d*) Explain types of errors.

(*e*) Write a Java program to find smallest element in an array.

5. Write short notes of any *three* of the following (**5** marks each) : 15

(*a*) Exception handling mechanism

(*b*) Local and remote applet

(*c*) Stream Classes in Java

(*d*) Applet life-cycle

(*e*) Data types of Java.

This question paper contains **3** printed pages]

GK—33—2023

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (Fourth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper BCA-403

(RDMS)

(Friday, 28-4-2023)   **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours   *Maximum Marks—75*

N.B. :—   (*i*)   *All* questions are compulsory.

     (*ii*)   Figures to the right indicate full marks.

     (*iii*)   Assume suitable data, if required.

     (*iv*)   Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) :   15

   (*a*)   What are the advantages of RDBMS ?

   (*b*)   Explain data types in SQL.

   (*c*)   What is Order by Clause ? Explain.

P.T.O.

(*d*)   Explain Comparison Operators IN, LIKE, IS NULL.

(*e*)   What is Data Constraints ?

(*f*)   Discuss Group by Clause with example.

(*g*)   Explain Self Join with example.

2.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Explain cross Join with example.

(*b*)   Explain with example number functions.

(*c*)   Explain PL/SQL Block.

(*d*)   Explain WHERE Clause.

(*e*)   Explain Altering Table with example.

3.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Explain Outer Join with example.

(*b*)   Explain subqueries and its types.

(*c*)   Explain Equi Join.

(*d*)   Explain with example Multiple Row Functions.

(*e*)   Explain string function.

4.   Attempt any *three* of the following (**5** marks each) :   15

(*a*)   Explain LOGICAL Operators : AND OR NOT.

(*b*)   Explain the different Data types in SQL.

(*c*) Explain with example the concept of Sorting.

(*d*) Explain the concept of primary key with example.

(*e*) Explain with example DDL commands in SQL.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) What is View ? Explain in detail.

(*b*) Explain Network. Model in detail.

(*c*) WHERE Clause.

(*d*) Joining three tables, Outer Join.

(*e*) DISTINCT Clause.