BCA 1st Semester 4 Year Course

Examination, December–2024

MATHEMATICS

Paper-23BCA401DS01

Mathematical Foundation of Computer Science

Time allowed : 3 hours] *[Maximum marks : 70*

Note : *Students have to attempt **five** questions in total, **first being compulsory** and selecting **one** from each unit. All questions carry equal marks.*

1. (a) How many number of subset of a set having n elements.

(b) Define equivalance relation ?

(c) Evaluate $\lim_{x \to 0} \frac{\sin x}{x}$

(d) Discuss the removable discontinuity.

(e) Find $\frac{dy}{dx}$ for $y = \sin^{-1}(x)$.

(f) If $\tan A = \frac{4}{3}$ then evaluate $\cos A$ and $\sin A$

(g) Evaluate the value of $\int_0^1 \frac{dx}{1+x^2}$.

Unit–I

2. (a) If $A = \{2, 4, 6, 8\}$ and $B = \{6, 8, 10, 12\}$ then find

(i) $A \cup B$

(ii) $A - B$

(iii) $A \cap B$

(b) In a group of 65-people, 40 like cricket, 10 like both cricket and tennis. find :

(i) How many like tennis ?

(ii) How many like tennis only and not cricket.

3. (a) If $f : R \to R$ is defined as $f(x) = \frac{5x+3}{7} : x \in R$.

Prove that f is bijective function and hence find the inverse of f.

(b) If the map $f : R \to R$ is given by $f(x) = \log(1+x)$ and the map $g : R \to R$ is given by $g(x) = e^x$ find $(g \circ f)\, x$ and $(f \circ g)\, x$.

Unit–II

4. (a) If $\tan A = ½$ and $\tan B = \frac{1}{3}$, find $\tan(2A + B)$.

(b) Show that $\lim_{x \to 0} \frac{e^{1/x} - 1}{e^{1/x} + 1}$ does not exist.

5. (a) Test continuity of the function

$$f(x) = \begin{cases} (x-a)\sin\dfrac{1}{x-a} & : x \neq a \\ 0 & : x = a \end{cases}$$

(b) Prove that

$$3\cos^2\frac{\pi}{4} + \sec\frac{2\pi}{3} + 5\tan^2\frac{\pi}{3} = \frac{29}{2}$$

Unit–III

6. Differentiate the following function with respect to x.

(a) $y = \tan^{-1}\left(\dfrac{\sqrt{1+x^2}-1}{x}\right)$

(b) $y = \left(\dfrac{\sin x + e^x}{1+\log x}\right)$.

7. Differentiate the function with respect to x.

(i) $y = \dfrac{\sqrt{1+\cos x}}{\sqrt{1-\cos x}}$

(ii) $y = x^{\log x}$

Unit–IV

8. (a) Let $f(x) = x^2 - 5x + 6$, find $f(A)$, If

$$A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$$

(b) Prove that $\begin{vmatrix} x+a & b & c \\ a & x+b & c \\ a & b & x+c \end{vmatrix} = x^2(a+b+c)$

9. (a) Solve the given system of linear equations by matrix method.

$x - y - z = 1,\ 2x + y + z = 2,\ x - 2y + z = 4$

(b) If $A = \begin{bmatrix} 1 & 3 & 5 \\ -1 & -3 & 7 \\ 0 & -5 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 4 & 6 \\ 0 & -2 & -4 \\ -6 & 8 & -8 \end{bmatrix}$

Prove that $(AB)^1 = B^1A^1$.

97752

BCA 1st Semester (4 Year Course)

Examination, December-2024

COMPUTER FUNDAMENTALS AND PROBLEM SOLVING USING C

Paper : 23BCA401DS02

Time allowed : 3 hours] *[Maximum marks : 50*

Note : Question No. 1 is compulsory. *Attempt* ***five*** *questions in total by selecting* ***one*** *question from each unit.*

1. (a) Compare RAM with ROM. 2

(b) What is debugging in programming? 2

(c) Differentiate between constant and variables in C with example. 2

(d) Compare i++ with ++i. 2

(e) Define operating system and mention various functions of operating system. 2

Unit–I

2. What do you mean by computer networks? Discuss various network topologies with their pros and cons. 10

3. Explain the Block diagram of the computer system and explain the functions of each unit. Discuss classification of computer systems. 10

Unit–II

4. (a) Explain various symbols used in Flowcharts. Draw a flowchart to find the given number is odd or even. 5

   (b) What is an algorithm? Write an algorithm to find out smallest of 3 numbers. 5

5. (a) Explain the following : 5

   printf(), scanf(), getch(), main() and getchar()

   (b) Write a program in C to find out simple interest. 5

Unit–III

6. Compare if-else and switch () statements. Write a program to print the months of year using switch () statement and if statement. 10

7. (a) Write a program in C to find out if given No. is prime or not. 5

   (b) Explain the syntax of all types of loops with examples. 5

Unit–IV

8. What is a user defined function? What are its different elements? What are different methods of passing arguments to functions? Discuss with an examples. 10

9. (a) What is an array? Write a program to take 5 values from the user and store them in an array. 5

   (b) Discuss various string manipulation functions with examples. 5

97662

BCA 1st Semester (Full & Re-appear)

Examination, December-2024

PC SOFTWARE

Paper : BCA-102

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt* ***five*** *questions.* ***Question No. 1 is compulsory.*** *Attempt other* ***four*** *questions selecting* ***one*** *question from each unit. All questions carry equal marks.*

1. Explain the following in detail : 8×2=16

   (a) Difference between Slide View and Slide Sorter View

   (b) Inserting Animated Pictures in PowerPoint

   (c) Coping and moving file and folders

   (d) Screensaver and Appearance

   (e) Components of window

   (f) Page formatting in MS-Word

   (g) Finding and replacement text in MS-Word

   (h) Word art in MS-PowerPoint

Unit–I

2. (a) What is Operating System? Explain the functions of Operating System in detail. 8

(b) What are icons? Explain the types of icons. Also explain the various operations which can be performed with icons. 8

3. Explain the concept of Control panel and the role of control panel in detail. 16

Unit–II

4. (a) What do you mean by Word Processing? What are the advantages of Word Processing? Also explain how to create and save documents. 8

(b) Explain in MS-Word the concept of Macros and file management in detail. 8

5. (a) What is mail merge? Write the steps involved in creating a mail merge in detail. Also explain the benefits of mail merge. 8

(b) Explain in MS-Word the concept of Linking and embedding object in detail. 8

Unit–III

6. (a) What is MS-Excel? How to manage and organize data in MS-Excel? Also explain the main applications of MS-Excel. 8

(b) What is Spreadsheet? Explain the features of spreadsheet in detail. 8

7. (a) What is Worksheet? Explain the various operations you can perform on your worksheet in detail. 8

(b) Explain the following in detail :

(i) Database management using Excel 4

(ii) Formulas and functions 4

Unit–IV

8. Explain the following in MS-PowerPoint in detail :

   (a) Organizational charts and Animations 8

   (b) Manipulating and Enhancing 8

9. (a) What is PowerPoint? What is the various application of the PowerPoint? Explain. 8

   (b) What are the various formatting options available in MS-PowerPoint? Explain in detail. 8

97664

BCA 1st Semester (Full & Re-appear)

Examination, December-2024

Logical Organization of Computers-I

Paper : BCA-104

Time allowed : 3 hours] *[Maximum marks : 80*

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*Note : **Question No. 1 is compulsory.** Attempt other **four** questions by selecting **one** question from each unit. All questions carry equal marks.*

1. (a) What are Boolean Theorems?

   (b) What are code converters?

   (c) What are DeMorgan's Laws?

   (d) What do you mean by digital logic? Explain.

   (e) What are Demultiplexers? State its importance.

   (f) What is Unicode? State its relevance.

   (g) What is the smallest and largest integer number represented in a 32-bit computer?

   (h) What are encoders? 8×2=16

Unit–I

2. (a) What are BCD codes? What is their significance? Discuss. 4

(b) Find out the values of X, Y and Z in the following : 12

$$(FA.C)_{16} = (X)_2 = (Y)_8 = (Z)_{10}$$

3. Explain the following :

(a) Character Codes 8

(b) Error detection and correction codes 8

Unit–II

4. (a) What is principle of Duality? Illustrate. 4

(b) Simplify the following Boolean expression using K-map : 12

$F(a, b, c, d) = \sum (1, 3, 4, 6, 7, 9, 11, 12, 13, 14)$

and obtain the expression in both SOP and POS.

5. Explain the following :

(a) Canonical form of Boolean Functions 5

(b) Venn diagrams 5

(c) De-Morgan's Law 6

Unit–III

6. (a) What are Universal Gates? Why these are named so? Justify. 6

(b) What do you mean by multilevel NAND and NOR circuits? Illustrate. 5

(c) What are AND-OR-INVERT and OR-AND-INVERT implementation? Explain. 5

7. (a) What is combinational circuit? What are its characteristics? Detail out the procedure for design of combinational circuit. 8

(b) Design a combinational circuit that receives 2-bit binary input and produces its square at the output. 8

Unit–IV

8. (a) What is a full-subtractor? Design a full-subtractor and implement the same using gates. 8

(b) What is a BCD to seven-segment Decoder? Design and implement it. 8

9. Explain the following :

(a) Multiplexer 8

(b) Magnitude Comparators 8

97661

BCA 1st Semester (Full & Re-appear)

Examination, December-2024

COMPUTER & PROGRAMMING

FUNDAMENTALS

Paper : BCA-101

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt any* ***five*** *questions in all, selecting at least* ***one*** *question from each unit.* ***Question No. 1 is compulsory.*** *All questions carry equal marks.*

1. (a) What is anti-virus software?

(b) What is Problem design?

(c) What do you mean by Flash memory?

(d) What are the uses of Optical disks?

(e) What do you mean by Virtual memory?

(f) Explain modes of data transmission.

(g) What do you mean by Linker and Loader?

(h) Define the Forms of data transmission.

8×2=16

Unit–I

2. (a) What is Computer? Explain the characteristics and classification of computers in detail. 8

(b) Explain the following in detail : 2×4=8

(i) Block Diagram of Computer along with its components

(ii) Limitations of computers.

3. Explain the following in detail : 2×8=16

(a) Primary and Secondary memory

(b) Secondary storage device

Unit–II

4. (a) What is Operating system? Explain the functions of operating system in detail. 8

(b) What is computer virus? Explain its different types in detail. 8

5. (a) Explain Multiprogramming, Multitasking, Time-sharing and real time operating system in detail. 8

(b) What is Software? Explain its types and role. Also explain the relationship between hardware and software. 8

Unit–III

6. (a) What is Programming Language? What are the good features of a programming language? Explain. 8

(b) Explain the concept of Compiler and Interpreter in detail. 8

7. (a) Explain the concept of structured programming. Also explain the top-down and bottom-up programming. 8

(b) Explain the concept of Machine language and Assembly language in detail. 8

Unit–IV

8. Explain the following in detail : 2×8=16

(a) Hardware and Software requirements for Internet

(b) Network Topologies

9. (a) What is internet? Explain the history of internet. Also explain the main applications of internet. 8

(b) What do you mean by Computer networks? Explain the types of computer network in detail. 8

97669

BCA 3rd Semester (Full & Re-appear)

Examination, December-2024

Introduction to Operating System

Paper : BCA-201

Time allowed : 3 hours] *[Maximum marks : 80*

Note : Question No. 1 is compulsory. *Attempt* ***four*** *questions by selecting* ***one*** *question from each unit. All questions carry equal marks.*

1. (a) What is the concept of thrashing?

(b) What is process states diagram?

(c) What is Critical Section?

(d) What is Queue scheduling algorithm?

(e) What is Real-time Scheduling?

(f) What do you mean by free space management?

(g) What are Bernstein's Conditions?

(h) What should be page size? Justify your answer.

8×2=16

Unit–I

2. (a) What are operating system services? Discuss their significance. 6

   (b) What is an operating system? What are important characteristics of a good operating system? Also discuss the responsibilities of an operating system as a resource manager. 10

3. Differentiate between the following :

   (a) Program, process and thread 6

   (b) Multitasking and Batch processing 5

   (c) Time-sharing and Multiprogramming 5

Unit–II

4. Differentiate 'Deadlock-Avoidance', 'Deadlock-Prevention' and 'Deadlock-Detection'. What is Banker's algorithm and indicate for which of the above three the same is used? Illustrate the same through a suitable example. 16

5. What do you mean by a scheduler? What should be the performance criteria for a scheduler? Compare and contrast importance scheduling techniques. 16

Unit–III

6. (a) What is fragmentation? What are different types of fragmentation? How each of these can be overcome? Explain. 7

(b) What is paging? How address mapping is performed in paging technique? Also enumerate the advantages and disadvantages of paging. 9

7. (a) What is memory management? Discuss objectives of memory management. 6

(b) What is a Swapping System? Consider a swapping system in which memory of the following hole sizes in memory order : 10K, 4K, 20K, 18K, 7K, 9K, 12K and 15K. Which hole is taken for successive requests of : 10

(i) 12K

(ii) 10K

(iii) 9K

for first-fit? Repeat the same for Best-Fit, Worst-Fit and Next-Fit.

Unit–IV

8. What is meant by disk scheduling? Explain why disk scheduling is necessary? Enumerate the principal differences among various disk-scheduling techniques. 16

9. What is a file-system? Give the general model of a file-system? What are the main responsibilities of a file-system? Where is file-system located in layered organization of operating system? 16

97672

BCA 3rd Semester (Full & Re-appear)

Examination, December-2024

Communication Skills (English)

Paper : BCA-204

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt* ***five*** *questions in all, selecting* ***one*** *question from each unit.* ***Question No. 1 is compulsory.***

1. (a) Write a short note on the scope of communication.

   (b) What is communication process?

   (c) What do you mean by non-verbal communication?

   (d) What is dyadic communication?

   (e) Make the words, using the following prefixes:

   (i) dis_____

   (ii) Ex_____

   (f) Make the words, using the following suffixes:

   (i) _____ent

   (ii) _____tion

   (g) What are the barriers to public speaking?

   (h) What are the objectives of interview? 8×2=16

Unit–I

2. (a) Discuss the features of Communication. 8

   (b) What are the principles of communication? 8

3. (a) Explain the process of communication. 8

   (b) What do you mean by communication barriers? Explain their important causes. 8

Unit–II

4. (a) State the disadvantages of verbal communication. 8

   (b) Define non-verbal communication and explain its importance. 8

5. (a) Explain the role of effective listening in communication. 8

   (b) Define soft skills. How these can be developed? 8

Unit–III

6. (a) Give one word substitute of any **five** of the following : 5

   (i) One who does not care for art, literature etc.

   (ii) Men living in the same age.

(iii) A game or battle in which neither party wins.

(iv) One who thinks only of oneself.

(v) One who is not easily pleased.

(vi) That which cannot be read.

(vii) A story that can hardly be believed.

(viii) A sound that cannot be heard.

(b) Form the words, using the following prefixes : 6

(i) Un_____

(ii) Dis_____

(iii) Im_____

(iv) Ir_____

(v) Ch_____

(vi) Re_____

(c) Fill in the blanks with appropriate prepositions : 5

(i) He is senior _____me.

(ii) He died of _____cancer.

(iii) He reached the station_____6 O'clock.

Fill in the blanks with articles :

(iv) He was _____intelligent student.

(v) It is _____ European Ship.

7. (a) Explain the various ways which help us to improve vocabulary. 8

(b) In what way we develop our fluency with the help of language games? 8

Unit–IV

8. (a) Explain the points we should keep in mind in organizing a public speech. 8

(b) What are the ways which are essential for an effective speech? 8

9. (a) What are the characteristics of an effective presentation? 8

(b) What are the major points for the preparation for professional interviews? 8

97670

BCA 3rd Semester (Full & Re-appear)

Examination, December-2024

DATA STRUCTURE-I

Paper : BCA-202

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt* ***five*** *questions in all.* ***Question No. 1 will be compulsory.*** *In addition to compulsory question, student will have to attempt* ***four*** *more questions selecting* ***one*** *question from each unit. All questions carry equal marks.*

1. Explain the following : 8×2=16

   (a) Data Structure

   (b) String

   (c) Parallel arrays

   (d) Threaded lists

   (e) Deques

   (f) Uses of trees in data structure

   (g) Graph theory

   (h) Define Tree.

Unit–I

2. Explain the following in detail : 2×8=16

   (a) Categories of Data structures

   (b) Applications of data structures

3. Explain the concept of storing strings, string operations and Pattern matching algorithms in detail. 16

Unit–II

4. What is Linked list? What are the advantages and disadvantages of representing a group of items as an array versus a linear linked list? 16

5. Explain the following in detail :

   (a) Linear arrays and Representation of linear array in memory 8

   (b) Header linked list and circular linked list with example. 8

Unit–III

6. (a) What is Stack? Explain the different operations on stacks in detail. 8

(b) Explain the applications of stack in detail. 8

7. What is Queues? Explain the concept of priority queues in detail. Also explain the applications of queues in detail. 16

Unit–IV

8. Explain the following in detail : 2×8=16

(a) Traversing binary trees

(b) Traversal algorithms using stacks

9. What is Graph? Explain Sequential and Linked representation of graphs in detail. 16

97680

B.C.A. 5th Semester (Full & Reappear)

Examination, December - 2024

VISUAL BASIC

Paper -BCA-304

Time allowed : 3 hours] *[Maximum marks : 80*

Note : ***Question No. 1 is compulsory.*** *Attempt* ***five*** *questions in total, the* ***first being compulsory*** *and select* ***one*** *question from each unit.*

1. (a) Explain the code window. 2

(b) What is the relation between Event Procedures? 2

(c) Explain the common properties of a form. 2

(d) VB is an event-driven programming language. Justify it. 2

(e) Write the steps to create an MDI form. 2

(f) What do you mean by variables? What is its scope? 2

(g) What do you mean by sub-menu? 2

(h) Discuss the menu bar and toolbar in detail. 2

Unit - I

2. (a) What do you mean by Visual Programming and Non-Visual Programming? Explain in detail. 8

(b) What is form? How do we create and manage it? 8

3. (a) Differentiate between Procedural and Object-Oriented Programming Language in detail. 8

(b) What is an event? Discuss some of the events supported by VB objects. Also, explain the role of the event processor in VB. 8

Unit - II

4. What do you mean by variables? What is its scope? Explain the different variables used in VB. 16

5. What is data type? Describe the different user-defined data types supported by VB. 16

Unit - III

6. Disucss various decision and condition used in VB with examples. 16

7. (a) Describe looping statements in VB language with examples. 8

(b) What is an array and what are its types? Explain with an example. 8

Unit - IV

8. (a) Explain creating Menus, Sub Menus using example. 8

(b) What is the popup menu? How to create a Popup Menu? Explain. 8

9. Explain Functions. What do you mean by passing arguments by value and passing arguments by reference? Explain by taking suitable examples. 16

97677

BCA 5th Semester (Full & Re-appear)

Examination, December-2024

MANAGEMENT INFORMATION SYSTEM

Paper : BCA-301

Time allowed : 3 hours] *[Maximum marks : 80*

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

Note :** Attempt **five** questions in all, selecting **one** question from each unit. **Question No. 1 is compulsory.

1. (a) What is EDP?

   (b) Define Information.

   (c) Explain MIS.

   (d) What do you mean by System Approach?

   (e) Define Structured Systems.

(f) Explain E-Commerce Applications.

(g) Define E-Business.

(h) Differentiate Data and information with example. 8×2=16

Unit–I

2. Define Information System with its types in detail. How information helps in decision making? 16

3. Explain : 16

(a) EDP

(b) DSS

(c) MIS

Unit–II

4. Explain MIS with its characteristics and components in detail. 16

5. Differentiate : 16

(a) Structured and unstructured Decision

(b) Formal vs Informal

Unit–III

6. How we can design and analysis of Management Information System? Write in detail. 16

7. (a) What are the Pitfalls in MIS development? 8

   (b) What is the role of Implementation in MIS? 8

Unit–IV

8. Explain the concept of Financial and Production Management Information System in detail. 16

9. (a) Define Decision Support System for Planning and Controlling. 8

   (b) Explain E-Commerce Technologies. 8

97679

BCA 5th Semester (Full & Re-appear)

Examination, December-2024

Data Communication and Networking

Paper : BCA-303

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Students shall be required to attempt* ***five*** *questions, selecting at least* ***one*** *question from each unit. All questions carry equal marks.* ***Question No. 1 will be compulsory.***

1. (a) What is Internetworking?

   (b) What is Flooding?

   (c) What is Repeater?

   (d) What is Gateways?

   (e) What is Data Rate?

   (f) What is Baud Rate?

   (g) What is Frame Relay?

   (h) What is ATM? 8×2=16

Unit–I

2. (a) What is a computer network? Differentiate between connection-oriented and connectionless services. 8

(b) Explain the Architecture of TCP/IP in detail with example. 8

3. Explain the following with example : 8+8=16

(a) Network Design Issues and Protocols

(b) Decentralized and Centralized Network

Unit–II

4. (a) Explain three ways to convert an analog signal into digital. 8

(b) Draw the pulse diagram for bit stream 101110001011, for the following encoding techniques : 8

(i) NRZ-L

(ii) Manchester

(iii) Differential Manchester

5. Explain the following with example : 4×4=16

(a) Dialup Networking

(b) Distributed Systems

(c) Digital Carrier Systems

(d) Switching and Multiplexing

Unit–III

6. (a) What is meant by Sliding Window Protocols? How is it useful in networks? Explain. 8

(b) Write a short note on Media Access Control. 8

7. Explain the following with example : 8+8=16

(a) Flow Control

(b) Detection and Correction

(c) Random Access Protocols

(d) Wireless LAN

Unit–IV

8. Write a short note on : 6+6+4=16

   (a) Congestion control algorithms

   (b) Symmetric key algorithms

   (c) Hierarchical Routing

9. Explain the following with example : 4×4=16

   (a) Virtual Circuit and Datagrams

   (b) Distance Vector Routing

   (c) Link State Routing

   (d) Encryption Methods

97693

BCA 6th Semester (Only Re-appear)

Examination, December–2024

ARTIFICIAL INTELLIGENCE

Paper-BCA-308

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt **five** questions in all selecting at least **one** question from each unit. **Question No.1 is compulsory.** All questions carry equal marks.*

1. Explain the following :

(a) Importance of AI

(b) Problem space.

(c) Syntactic processing

(d) Representing instances

(e) Uses of expert system

(f) Representing simple facts in logic

(g) Constraint satisfaction

(h) Learning by taking advice

8×2=16

Unit-I

2. Explain the AI (Artificial Intelligence) and its related field in detail. Also explain AI techniques in detail. 16

3. Explain the following in detail :

(a) Hill Climbing 8

(b) Issues in the design of the search problem 8

Unit-II

4. Explain the following in detail :

(a) Computable function and predicate 8

(b) Various approaches used in knowledge representation 8

5. What do you mean knowledge representation? What are the characteristics of a knowledge representation system? Explain how can inheritable knowledge be represented? 16

Unit-III

6. (a) What is natural language processing? Also explain semantic processing in detail. 8

(b) What is Learning? Explain rote learning and explanation based learning in detail. 8

7. Explain the following in detail :

(a) Learning in problem solving 8

(b) Discourse and pragmatic processing 8

Unit-IV

8. What is Knowledge? Explain the concept of representing using domain specific knowledge in detail. 16

9. (a) What is an Expert System? What are the different applications of expert systems? 8

   (b) Explain the concept of expert system shells in detail. 8

97694

BCA 6th Semester (Only Re-appear)

Examination, December–2024

INTRODUCTION TO .NET

Paper-BCA-309

Time allowed : 3 hours] *[Maximum marks : 80*

Note : (i) Attempt **five** questions in all by selecting **one** question from each unit. **Question No.1 is compulsory.**

(ii) All questions carry equal marks.

1. (a) What is function overriding?

(b) Why C# is more object-oriented?

(c) What are abstract classes?

(d) What are control constructs in C# ?

(e) What is automatic memory management?

(f) What is metadata in .NET?

Unit-I

2. (a) What is Visual-Studio.Net? Enumerate its capabilities for C# application development.

(b) What are web forms? What are their salient features? What are the components of a web form? Illustrate their working.

3. Explain the following :

   (a) .NET Framework

   (b) Namespaces in .NET

Unit-II

4. (a) What are Class Libraries in C# ? Illustrate.

   (b) What is C#? How it is different from Java? Explain.

5. Explain the following :

   (a) Data types in C#

   (b) Boxing and Unboxing

Unit-III

6. (a) What are various data access methods? Which data access method is used in .NET and why? Illustrate its benefits over other methods.

   (b) What is a method in C#? How a method is invoked in C#? What is the significance of writing main method in different ways? Also give two examples where method overloading is applied.

7. Explain the following :

   (a) Operator precedence & associativity

   (b) for and foreach loops

Unit-IV

8. (a) What do you understand by exception handling in C#? What are the major tasks involved in handling exceptions? What are the exceptions that occur commonly in C# programs?

   (b) Answer the following :

   (i) Why is proper ordering of catch blocks necessary in C#?

   (ii) What happens when an exception is caused in an inner try block of a nested try block?

   (iii) How exception-handling mechanisms can be used for debugging a program?

9. Explain the following :

   (a) Sealed classes and methods

   (b) Interfaces in C#

97692

B.C.A. 6th Semester (Only Reappear)

Examination, December - 2024

OBJECT TECHNOLOGIES AND PROGRAMMING USING JAVA

Paper -BCA-307

Time allowed : 3 hours] *[Maximum marks : 80*

Note : ***Question No. 1 is compulsory.*** *Attempt* ***five*** *questions in total, the* ***first being compulsory*** *and select* ***one*** *question from each unit.*

1. Write a short note on the following :

(a) Data Abstraction and Encapsulation. 2

(b) Applications of OOPs 2

(c) Java Virtual Machine 2

(d) Abstract Classes 2

(e) Throw and throws keyword 2

(f) CLASSPATH in Java 2

(g) Stream Classes 2

(h) String Buffer classes 2

Unit - I

2. (a) Differentiate between Procedure-oriented and Object-oriented Languages. 8

(b) What are Object-oriented Language? What are their main Benefits and applications? 8

3. Define the following terms: 4×4=16

(a) Abstraction

(b) Inheritance

(c) Polymorphism

(d) Encapsulation

Unit - II

4. (a) Why is Java more suitable than other languages? Explain its essential features. 10

(b) What are control statements in JAVA? Write a program to show the use of the For loop. 6

5. Describe the following in Java :

(a) Data types 4

(b) Method Overloading 4

(c) Method Overriding 4

(d) Constructors 4

Unit - III

6. (a) What do you mean by exceptions? How can they be handled in Java? What are the advantages of using an exception-handling mechanism in a program? Illustrate with example. 8

(b) Explain User-defined Exceptions with the help of the program. 8

7. (a) What are Abstraction and Abstract classes in OOPs? How we can achieve abstraction in Java? Explain using a suitable example. 8

(b) What are Java packages? How are they accessible? 8

Unit - IV

8. (a) Explain the concept of multithreading. How can a thread be created? Explain with the help of a program. 8

(b) What do you mean by thread priority? Write a program to implement thread priority. 8

9. (a) What is an I/O stream in Java? Explain reading and writing in files with Java code. 8

(b) Explain String operations in Java. 8

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E-Commerce

Paper : BCA-306

Time allowed : 3 hours] *[Maximum marks : 80*

Note : *Attempt* ***five*** *questions in all.* ***Question No. 1 will be compulsory.*** *In addition to compulsory question, student will have to attempt* ***four*** *more questions selecting* ***one*** *question from each unit.*

1. Explain the following : 8×2=16

   (a) E-Commerce in Industry

   (b) EDI agreement

   (c) Electronic market

   (d) Internet

   (e) Traditional Commerce Vs Electronic Commerce

   (f) Change Card

   (g) Value Chains

   (h) Clients threats

Unit–I

2. (a) What is E-Commerce? Explain Scope and Future of E-Commerce in detail. 8

   (b) Explain the Application of E-Commerce in Direct Marketing and Selling in detail. 8

3. Explain the following in detail :

   (a) Impact of E-Commerce 8

   (b) Obstacles in adopting E-Commerce 8

Unit–II

4. Explain the following in detail :

   (a) Inter-organizational value chains and Porter's value chain model 8

   (b) Security Threats in E-Commerce 8

5. Explain the following in detail :

   (a) Computer Security classification 8

   (b) Supply chain and strategic Business unit chains 8

Unit–III

6. (a) What is electronic payment system? Explain Electronic cash and electronic wallets in detail. 8

   (b) Write detail note on Insuring Transaction Integrity and Protecting Client computers. 8

7. Explain the following in detail :

   (a) Smart card and Credit card system 8

   (b) Protecting E-Commerce Assets and Protecting intellectual property 8

Unit–IV

8. Explain the following in detail :

   (a) Inter-organizational Trade cycle 8

   (b) EDI implementation and EDI Security 8

9. Explain the following in detail :

   (a) Benefits of EDI and EDI standards 8

   (b) Credit Transaction Trade cycle in detail. 8