Roll No. : .....

Total No. of Questions : **9**] [Total No. of Pages : **7**

97663

B.C.A. 1st Semester (New)
(Full & Reappear)
Examination, March-2021

MATHEMATICS

Paper-BCA-103

*Time : **Three** 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. All questions carry equal marks.

1. (a) Compute 3A + 4B if :

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

(b) Write the power set of {2, 5, 10}.

(c) Evaluate :

$$\lim_{x \to 0} \frac{1-\cos 2x}{x^2}$$

(d) Find the domain of :

$$y = \sqrt{x-5}$$

(e) Find $\frac{dy}{dx}$, when :

$$y = \frac{3x^2+1}{x}$$

(f) Find $\frac{dy}{dx}$, when :

$$y = a^{7x+4}.$$

(g) Evaluate :

$$\int \sqrt{x}(x^2+2x+3)dx$$

(h) Evaluate :

$$\int \frac{dx}{1-\cos x}$$

2×8=16

Unit–I

2. (a) In a group of 400 people, 250 can speak English only and 70 can speak Hindi only. Find :

(i) How many can speak both English and Hindi ?

(ii) How many can speak English ?

(iii) How many can speak Hindi ? 8

(b) If :

$$A = \begin{bmatrix} 3 & 2 & 0 \\ 1 & 4 & 0 \\ 0 & 0 & 5 \end{bmatrix}$$

show that : $A^2 - 7A + 10I = 0$ where I is a unit matrix. 8

3. (a) Prove that :

$$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a+b+c)(a-b)(b-c)(c-a)$$

8

(b) Solve the following system of equations using matrices :

$$2x + 8y + 5z = 5$$
$$x + y + z = -2$$
$$x + 2y - z = 2$$ 8

Unit–II

4. (a) In the set N of all natural numbers, let a relation R be defined by :

$$R = \{(x, y) : x \in N, y \in N, x - y \text{ is divisible by } 5\}$$

Prove that R is an equivalence relation. 8

(b) (i) If :

$$f(x) = x^5 - \frac{1}{x^5},$$

find the value of $f(x) + f\left(\frac{1}{x}\right)$. 4

(ii) If :

$$f(x) = x + \frac{1}{x},$$

prove that :

$$[f(x)]^3 = f(x^3) + 3f\left(\frac{1}{x}\right)$$ 4

5. (a) Evaluate :

$$\lim_{x \to 0}\left(\frac{\operatorname{cosec} x - \cot x}{x}\right)$$ 8

(b) Discuss the continuity of the function $f(x)$ at $x = \frac{1}{2}$:

$$f(x) = \begin{cases} \frac{1}{2} - x, & \text{if } 0 \le x < \frac{1}{2} \\ 1, & \text{if } x = \frac{1}{2} \\ \frac{3}{2} - x & \text{if } \frac{1}{2} < x \le 1 \end{cases}$$ 8

Unit–III

6. Differentiate the following functions w.r.t. x :

(i) $y = \frac{x}{\sin x}$

(ii) $y = \sqrt{\frac{1-x}{1+x}}$

(iii) $y = \tan^{-1}\left(\sqrt{\frac{1+\sin x}{1-\sin x}}\right)$

(iv) $y = \tan^{-1}\left(\sqrt{1+x^2}+x\right)$ 4×4=16

7. (a) Find $\frac{dy}{dx}$, if :

$y = x^{\sin x} + (\sin x)^x$. 8

(b) Find $\frac{dy}{dx}$, when :

$x = a(1 + \cos \theta)$,

$y = a(\theta + \sin \theta)$ 8

Unit–IV

8. Evaluate the following integral :

(a) $\int \tan^{-1}(\sec x + \tan x)dx$ 8

(b) $\int \frac{x^2 \tan^{-1} x}{1+x^2} dx$ 8

9. Evaluate the following integral :

(a) $\int \frac{x\,dx}{(x+2)(3-2x)}$ 8

(b) $\int_0^{\pi} \log(1+\cos x)dx$ 8

(c) What do you mean by multilevel NAND and NOR circuits ? Illustrate. 4,8,4

Unit–IV

8. (a) What is a Multiplexer ? How does it work ? What are its applications ? Explain.

   (b) What is a Parallel Adder ? Design a 4-bit parallel adder. 8,8

9. Explain the following :

   (a) BCD to seven-segment Decoder

   (b) Comparators 8,8

Roll No. : .....

Total No. of Questions : **9**] [Total No. of Pages : **4**

97664

BCA 1st Semester (New)
(Full & Reappear)
Examination, March-2021

LOGICAL ORGANISATION OF COMPUTER-I

Paper-BCA-104

*Time : **Three** 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. All questions carry equal marks.

1. (a) What is Unicode ? State its relevance.

   (b) What is a Full-adder ?

   (c) What is Duality principle ?

   (d) What are Digital Signals ? Explain.

(e) What are Venn Diagrams ?

(f) Which number system is followed in digital computers and why ?

(g) What is a Normalized Number ? Outline its essence.

(h) What are Demultiplexers ? State their importance. 2×8=16

Unit–I

2. (a) Find out the values of X, Y and Z in the following :

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

(b) What do you understand by BCD Codes ? What is their significance ? Illustrate. 12,4

3. Explain the following :

(a) Character Codes

(b) Error Detection and Correction Codes 8,8

Unit–II

4. Explain the following :

(a) Multilevel NAND and NOR Circuits

(b) Boolean Algebra

(c) Standard forms of Boolean Functions 5,6,5

5. (a) What is De Morgan's Theorem ? How is it useful ? Illustrate its use with suitable examples.

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

F (a, b, c, d) = Σ (0, 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14)

and obtain the expression in SOP and POS. 6,10

Unit–III

6. (a) What are AND-OR-INVERT and OR-AND-INVERT implementation ? Explain.

(b) Design a combinational circuit that receives 4-bit binary input and produces its 2's complement. 6,10

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

(b) What is Combinational Circuit ? What are its characteristics ? Detail out the procedure for design of combinational circuit.

Roll No. .....

97666

BCA 2nd Semester (Full and Re-appear) Examination – October, 2020

LOGICAL ORGANIZATION OF COMPUTER

Paper : BCA-107

Time : 1.45 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 any ***three*** questions. All questions carry equal marks.

1. (a) What do you mean by an I/O Interface ?

(b) What characterizes optical storage devices ?

(c) What are race conditions ?

(d) What is an Input/Output Processor ? State its significance.

(e) What is a RS Latch ?

(f) What are addressing modes ?

(g) What is Interrupt structure ?

(h) What are applications of ROM ?

2. (a) What are Excitation Tables ? How are these relevant ? Draw Excitation Table for RS and J/K flip-flop.

(b) What is JK flip-flop ? How does it work ? Illustrate its working.

3. Explain the following :

(a) Master-Slave flip-flop

(b) State Diagram

4. (a) What do you mean by Modulo-6 counter ? How do you design it ? Explain its working through block diagram.

(b) What is a shift-register ? Design a 4-bit shift register and outline the procedure for serial to parallel conversion and vice-versa.

5. Explain the following :

(a) Asynchronous Sequential Circuit

(b) Up-Down Binary Counter

6. (a) What is Flash Memory ? How does it work ? Illustrate its usefulness.

(b) What is Internal memory ? How is it different from External memory ? What are important memory parameters ? Illustrate.

7. Explain the following :

(a) I/O device controllers

(b) IC RAM

8. (a) What is Instruction Format ? What are its various types ? How is it relevant in computer architecture ? Illustrate.

(b) What is Instruction Set ? What is the criteria for an Instruction Set selection ? Illustrate.

9. Explain the following :

(a) Instruction Cycle

(b) DMA technique

---

7. (a) What is Queue ? Discuss its various applications.

(b) Write an algorithm for insert an element to circular queue using arrays.

Unit–IV

8. What is Binary Tree ? What are its traversing methods ? Explain with the help of example.

9. Describe binary search tree and its applications. Write an algorithm for searching and inserting a node in binary search tree.

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Total No. of Questions : **9**] [Total No. of Pages : **4**

97670

BCA 3rd Semester (New)
(Full & Reappear)
Examination, March–2021

DATA STRUCTURE-I

Paper-BCA-202

*Time : **Three** 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. Question No. **1** is compulsory and attempt four more questions by selecting *one* question from each Unit. All questions carry equal marks.

1. (a) What is String ? How is it stored in memory ?

(b) What is Algorithm ?

(c) What is Array ?

(d) What is use of header node in linked list ?

(e) Define priority queue.

(f) Write four applications of priority queue.

(g) Write the properties of tree.

(h) Give any *two* applications of graph.

Unit–I

2. Differentiate between :

(i) Linear and Non-linear data structure.

(ii) Homogenous and Non-Homogenous data structure.

(iii) Primitive and Non-primitive data structure.

(iv) Static and dynamic data structure.

3. Discuss the complexity of an algorithm. What do you understand by time and space tradeoff ? What is the significance of Big O Notation ?

Unit–II

4. (a) Write an algorithm to insert an element into a one-dimensional array.

(b) What is two dimensional Array ? How is it stored in memory ? Explain with the help of example.

5. (a) What is Linked List ? What are its advantages and disadvantages over array ?

(b) Write an algorithm to delete a specific element from singly linear linked list.

Unit–III

6. (a) What is Stack ? Explain *three* different applications of stacks with the help of example.

(b) How stack is implemented using array ? Write the algorithm of its basic operations.

Roll No. 3-8-25

97673

BCA 4th Semester

Examination – July, 2021

WEB DESIGNING

Paper : BCA-206

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

1. Explain the following :

(a) Adding Pictures on web page

(b) WWW and Web page

(c) Layers of Netscape

(d) Search tools

(e) Hypertext Transfer Protocol

(f) Frame creation and layouts

(g) URLs

(h) Dynamic HTML

UNIT – I

2. (a) What is Internet ? Discuss evolution and applications of Internet.

   (b) What do you mean by TCP/IP ? Explain its services in detail.

3. Explain the following in detail

   (a) Search Engines and Search Tools

   (b) Web browser and Web servers

UNIT – II

4. (a) What is web site ? Explain the steps for developing web site with a suitable example.

   (b) What is DNS ? Explain the working of DNS ?

5. (a) What do you mean by ISP ? Discuss how information travels through an ISP.

   (b) Explain the following in detail :

   (i) Front page views

   (ii) Relating Front page to DHTML

UNIT – III

6. What is HTML ? Discuss the various features and versions of HTML Also explain the structure of HTML with suitable example.

7. Explain the following with example :

   (a) Formatting text and page layouts

   (b) Creating links in HTML and Text Styles

UNIT – IV

8. Explain the following in detail :

   (a) Cascading style sheet positioning

   (b) JavaScript Style Sheet

9. (a) What is DHTML ? How it is different from HTML? Discuss the various features of DHTML ?

   (b) What is the difference between the ordered list and unordered list in HTML ? Explain with example.

Roll No. .....

97674

BCA 4th Semester

Examination – July, 2021

DATA STRUCTURE-II

Paper : BCA-207

Time : Three 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 by selecting ***one*** question from each Unit. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. Answer the following questions briefly : $8 \times 2 = 16$

(a) Explain the complexity of Insertion sort in few lines.

(b) Write advantages of direct files.

(c) Describe two applications of binary trees.

(d) Discuss major features of B+ trees.

(e) Explain variable and fixed length records.

(f) Describe complexity of Quick sort.

(g) Explain classification of files.

(h) Discuss graphs and their applications

UNIT – I

2. (a) What is m-way search tree ? How is it useful and used ? Discuss with examples. 8

(b) Discuss uses and advantages of binary search trees with suitable examples. 8

3. Explain the following briefly with suitable examples :

(i) AVL and B+ trees and their relative merits/demerits

(ii) Role and advantages of threads in Binary search trees 12, 4

UNIT – II

4. (a) What is Warshall's algorithm ? How is it useful and used ? Explain with suitable examples. 10

(b) Discuss graph traversal and its advantages with suitable examples. 6

5. Describe the following with examples : 16

(a) Major applications of graphs in Computer Science

(b) Dijkstra algorithm, its applications

UNIT – III

6. (a) What is Heap sort ? How is it used and useful ? Explain its complexity also with suitable examples. 12

(b) Differentiate between Internal and External sorting with examples. 4

7. Explain the following examples : 16

(i) Radix sort and its complexity

(ii) Differentiate between linear and binary search with their relative merits/demerits

UNIT – IV

8. (a) Define collisions ? How these are harmful and resolved ? Discuss its techniques with examples. 8

(b) Explain Indexed sequential files, their uses and advantages. 8

9. Explain the following with examples :

(a) Random access file, its uses and advantages 8

(b) Four Hashing techniques and their relative merits/demerits. 8

Roll No. .....

97675

BCA 4th Semester Examination – July, 2021

OBJECT ORIENTED PROGRAMMING USING C++

Paper : BCA-208

Time : Three 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***. All questions carry equal marks.

1. Answer the following questions briefly : $8 \times 2 = 16$

(a) Discuss static function and its two uses in C++.

(b) Describe two major applications of Abstraction.

(c) Explain new with an example in C++.

(d) Discuss derived class in C++ briefly.

(e) Describe iostreams in C++ in few lines.

(f) Differentiate between private and protected in C++.

(g) Write the use and advantages of recursion in C++.

(h) Explain user defined types in C++.

UNIT – I

2. (a) Define function. How is it useful and used ? Discuss with C++ examples. 8

(b) Discuss encapsulation in C++ with an example. 8

3. Explain the following briefly with suitable examples :

(i) Merits of Object-Oriented Approach (8 each)

(ii) Data types in C++

UNIT – II

4. (a) Define references. How these are useful and used ? Explain with examples in C++. 8

(b) Explain destructors and its types, uses with examples in C++. 8

5. Describe the following with examples :

(i) Use and advantages of constructors in C++ 8

(ii) Memory management in C++ 8

UNIT – III

6. (a) Define virtual function? How is it used and useful ? Explain with C++ examples. 8

(b) Explain Inheritance and its types, advantages with suitable examples in C++. 8

7. Explain the following with examples :

(i) Overriding member function in C++ 8

(ii) Static functions and its uses and advantages 8

UNIT – IV

8. (a) What are template classes ? How these are used and useful ? Discuss with examples in C++. 8

(b) Explain unexpected exception in C++ with suitable examples. 8

9. Explain the following with examples :

(i) Exception handling in C++ 8

(ii) Strings and its uses in C++ 8

(b) Explain the concept of unit testing, Integration testing and system testing in detail. 8

9. (a) What is software Maintenance ? What is the importance of Software Maintenance ? Explain in detail. 8

(b) What are various type of software maintenance ? Discuss in detail. 8

Roll No. .....

97676

BCA 4th Semester

Examination – July, 2021

SOFTWARE ENGINEERING

Paper : BCA-209

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

1. (a) What is Software Crisis ? Explain. 2

(b) What is Token count ? 2

(c) What are the benefits of software project estimation ? Explain. 2

(d) Explain the concept of Software processes in detail. 2

(e) What is COCOMO model ? 2

(f) What do you mean by validation and verification ? 2

(g) What do you mean by Test cases ? Explain its uses. 2

(h) What do you mean by size estimation ? 2

UNIT – I

2. (a) What is Software Engineering ? What are the essential characteristics and challenges of software engineering ? Explain. 8

(b) Explain the nature and characteristics of Software Requirement Specification (SRS) in detail. 8

3. (a) What is Software Requirements Engineering ? Discuss the various requirements engineering processes in detail. 8

(b) Compare waterfall model and spiral model of Software Development. 8

UNIT – II

4. (a) What do you mean by Software Project Planning? Also outline the goals of software project planning. 8

(b) How is software management different from other types of engineering managements ? Illustrate. 8

5. (a) What do you mean by software project management ? What are the main project management activities ? Explain. 8

(b) Explain the following in detail : 8

(i) Software risk management

(ii) Cost Estimation Models

UNIT – III

6. (a) What do you mean by cohesion and coupling ? How are the concept of cohesion and coupling useful in arriving at good software design. 8

(b) What is software design ? State its relevance and also discuss the importance of software design in software engineering. 8

7. (a) What is software implementation ? Explain the relationship between design and implementation in detail. 8

(b) What are software metrics ? Discuss the effect of software metrics on software productivity. 8

UNIT – IV

8. (a) What is software testing ? How is testing important in software life cycle ? Discuss the objectives of software testing. 8

Roll No. .....

97678

BCA 5th Semester Examination – July, 2021

COMPUTER GRAPHICS

Paper : BCA-302

Time : Three 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***. All questions carry equal marks.

1. (a) Define Input Devices in graphics system.

(b) Define graphics monitors and workstations.

(c) Explain geometric transformations.

(d) Explain Shear transformation in 2-D transformations.

(e) Define Non Emissive devices.

(f) Define aspect ratio in CRT.

(g) Explain Depth Cueing.

(h) Explain Rotation transformation in 3-D transformations.

UNIT – I

2. Define Computer Graphics and explain application areas of Computer Graphics.

3. (a) Explain DDA's line algorithm.

   (b) Explain boundary fill and flood fill algorithms.

UNIT – II

4. What are two dimensional transformations ? Explain Translation and Scaling transformations.

5. Explain window to viewport coordinate transformation and also define its viewing functions.

UNIT – III

6. Write short note on the following :

   (a) Polygon Surfaces.

   (b) Bezier curve and B-Spline curves.

7. Define the basic illumination models. Explain its various methods.

UNIT – IV

8. Explain the three dimensional composite transformations in details.

9. What is viewing pipeline ? How general projection transforms and clipping can be done in three dimensional viewing ?

Roll No. .....

97679

BCA 5th Semester

Examination – July, 2021

DATA COMMUNICATION AND NETWORKING

Paper : BCA-303

Time : Three 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 : Question No. **1** is ***compulsory***. Attempt any ***four*** questions from remaining four Units by selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) Explain the uses of computer networks.

(b) What is Virtual circuits ?

(c) What do you mean by internetworking.

(d) What is Public-key algorithm ?

(e) Explain Bridges and Gateways.

(f) What is Frame Relay ? Explain.

(g) What is DSL service ? Explain.

(h) What do you mean by Digital carrier systems ?

UNIT – I

2. What is OSI model ? Explain duties of different layers of OSI model in detail.

3. Explain the following in detail :

   (a) Web Based Model

   (b) Frame Relay

UNIT – II

4. (a) What is data modulation ? Explain its techniques in detail.

   (b) What is data encoding ? Explain the data encoding techniques in detail.

5. Explain the following in detail :

   (a) Asynchronous and synchronous transmission

   (b) Switching and Multiplexing

UNIT – III

6. (a) What do you mean by Ethernet ? Explain Switched and Fast Ethernet in detail.

   (b) Explain the concept of wireless LANs and Bluetooth in detail.

7. Explain the following in detail :

   (a) Error-detection and correction code

   (b) Media Access Control

UNIT – IV

8. What is Network Security ? Explain the security threats and encryption methods in detail.

9. What do you mean by Routing Algorithms ? Explain Flooding, shortest path routing, distance vector routing and link state routing in detail.

Roll No. .....

97677

BCA 5th Semester

Examination – July, 2021

MANAGEMENT INFORMATION SYSTEM

Paper : BCA-301

Time : Three 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 any ***five*** questions by selecting ***one*** question from each Unit. Question No. **1** is ***compulsory.*** All questions carry equal marks.

1. (a) Distinguish between Data and Information.

(b) Discuss the Characteristics of Information System.

(c) Role of planning in Decision Support System.

(d) What is System Approach? Explain.

(e) Explain the characteristics of MIS.

(f) "Planning is looking ahead." Comment.

(g) Explain Formal vs Informal System in detail.

(h) What is E-business Systems ? Explain.

UNIT – I

2. (a) Explain Basic System concepts and types of systems in detail.

   (b) What is Information system (IS)? How the information system can be used as a cost reduction measure in the society ? Explain with suitable examples. Also explain the role of information system in Decision Making.

3. What do you mean by sub-systems of an Information system? Also explain the concept of EDP ,MIS and DSS in detail.

UNIT – II

4. Explain the following in detail :

   (a) Components of MIS

   (b) Structured Vs. Un-structured Decisions

5. (a) What do you mean by Management? Explain the Levels of Management in detail.

   (b) Explain Simon's model of decision making in detail.

UNIT – III

6. (a) Explain the different Pitfalls in MIS development.

   (b) Explain the concept of Implementation and evaluation of MIS in detail.

7. (a) What do you mean by analysis of Information System. Explain in detail.

   (b) Explain the concept of design of Information System in detail.

UNIT – IV

8. Explain the following :

   (a) Decision Support System for control and decision-making.

   (b) E-Commerce Technologies

9. What do you mean by functional MIS ? Explain the concept of Personnel, financial and production MIS in detail.

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Total No. of Questions : **9**] [Total No. of Pages : **3**

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BCA 5th Semester (New)
(Full & Reappear)
Examination, March-2021

MANAGEMENT INFORMATION SYSTEM

Paper-BCA-301

*Time : **Three** 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. All questions carry equal marks.

1. Explain the following :

   (a) DSS

   (b) Formal *Vs* Informal Systems

(c) Implementation and Evaluation

(d) E-business Systems 16

Unit–I 16 each

2. Define System. Explain its types. Also explain characteristics of information system.

3. Explain the following :

   (a) EDP

   (b) MIS

Unit–II 16 each

4. Describe the framework for understanding MIS.

5. Describe the following :

   (a) Structured *Vs* Unstructured Decisions

   (b) Levels of Management

Unit–III 16 each

6. Describe the different Pitfalls in MIS Development.

7. What do you mean by Implementation and Evaluation ? Explain in detail.

Unit–IV 16 each

8. Describe in detail about Financial and Production MIS.

9. Explain the following :

   (a) E-commerce

   (b) Decision Support Systems

Roll No. .....

97677

BCA [redacted] 5th Semester (Re-Appear) Examination – October, 2020

MANAGEMENT INFORMATION SYSTEM

Paper : BCA-301

Time : 1.45 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 any ***three*** questions. All questions carry equal marks.

1. Explain the following :
   (a) Types of Information
   (b) Components of MIS
   (c) Developing Information System
   (d) E-commerce

2. Define Information System. Explain its characteristics. Also explain role of information in Decision making.

3. Explain the following :
   (a) EDP
   (b) DSS

4. Define Management Information System and its characteristics. Also explain components of MIS.

5. Describe the Simon's model of decision making in detail.

6. What do you mean by Analysis & design of Information System. Explain in detail.

7. Explain the different Pitfalls in MIS development.

8. What do you mean by functional MIS ? Explain in detail.

9. Describe decision support system in detail.

UNIT – IV

8. (a) Explain the following in detail :

   (i) Adding Multiple forms in VB

   (ii) Load & Unload statement through suitable example

   (b) Describe the methodology to create a menu using Visual Basic.

9. (a) What is function ? Explain the concept of Function returning data types and Function Returning Arrays in VB .

   (b) What do you mean by Procedures ? Discuss various types of procedures available in VB in detail.

Roll No. .....

97680

BCA 5th Semester Examination – July, 2021

VISUAL BASIC

Paper : BCA-304

Time : Three 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***. All questions carry equal marks.

1. (a) How do you save a project in Visual Basic ?

   (b) Discuss Static and Dynamic arrays in detail.

   (c) How VB Supports integrated Development Environment ?

   (d) Discuss immediate window and code window in detail.

(e) What does Option Explicit refer to ?

(f) Explain the concept of Optional Arguments and Named Arguments.

(g) What do you mean by Hiding and Showing forms ?

(h) Explain the need of built-in functions in Visual Basic.

UNIT – I

2. (a) What do you mean by Visual & Non-Visual Programming, Procedural, object-oriented programming language ? Explain in detail.

(b) What do you understand by event driven programming ? List and explain about some of the event supported by VB object. Also describe the role of event processor in VB.

3. (a) What is form ? How do we create the form and managed at run time ? Also discuss some common form properties.

(b) Explain the following in detail :

(i) Toolbox and Properties window

(ii) Form designer and Form layout

UNIT – II

4. (a) Discuss the usage of Message box, Input box and Print statement in VB Program.

(b) Discuss various controls used for Input/Output in VB.

5. (a) What do you mean by variables ? What is its scope ? Explain the different variables used in VB.

(b) What do you mean by Constants and Operators in VB ? Explain the different types of operators used in VB.

UNIT – III

6. What do you mean by control Loop and Conditional Statements in VB ? Explain in detail with example.

7. (a) What do you mean by collection ? Explain the concept of Returning items in a collection in detail.

(b) What do you mean by Arrays ? Give difference between One-Dimensional and Multi-Dimensional Arrays. How can they be created in Visual Basic ? Give syntax.

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97691

BCA 6th Semester

Examination – July, 2021

E-COMMERCE

Paper : BCA-306

Time : Three 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 by selecting ***one*** question from each Unit. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. Answer the following in Brief : $8 \times 2 = 16$

(a) What is E-Commerce ?

(b) Impact of E-Commerce on Society.

(c) What do you mean by Threat ?

(d) Define Value Chain.

(e) What do you mean by Electronic payment ?

(f) What do you mean by Transaction Integrity?

(g) Define Business to Business.

(h) What is EDI ?

UNIT – I

2. (a) Write down difference between Electronic Commerce and Traditional Commerce. 8

(b) What is the scope of Electronic Commerce ? 8

3. (a) What are the different objective of Electronic Commerce ? Explain the different obstacles in adopting the Electronic Commerce. 8

(b) Write down different applications of E-Commerce in Direct marketing and selling. 8

UNIT – II

4. Define the following : 16

(a) Inter Organizational Value Chains.

(b) Industry Value Chains.

(c) Supply Chain

(d) Strategic Business Unit Chain

5. Define different type of Threats in E-Commerce and Security measures for these threats. 16

UNIT – III

6. Describe different security measures for protecting E-Commerce Assets, E-Commerce Channels, Client Computer and Commerce server. 16

7. What do you by Electronic Payment ? Describe different Electronic Payment systems used in E-Commerce. 16

UNIT – IV

8. Define the followings : 16

(a) Credit Transaction Trade Cycle.

(b) Inter-Organizational Transitions

9. (a) What do you mean by Electronic Data interchange ? Define its benefits. 8

(b) What different technologies are used for electronic data interchange. 8

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9. Explain the following with examples :

(a) Reading and writing files in Java 8

(b) Transient and volatile modifiers in Java 8

30-7-21

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97692

BCA 6th Semester

Examination – July, 2021

OBJECT TECHNOLOGIES & PROGRAMMING USING JAVA

Paper : BCA-306

Time : Three 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 by selecting ***one*** question from each Unit. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. Answer the following in questions briefly : $8 \times 2 = 16$

(a) How arrays are used in Java ?

(b) Describe finalize method in Java.

(c) Explain string buffer class with an example in Java.

(d) Discuss exception in Java briefly.

(e) Describe package naming in Java in few lines.

(f) Define garbage collection ?

(g) Write the use and advantages of abstract class in Java.

(h) Explain try-catch in Java.

UNIT – I

2. (a) What is abstraction ? How is it useful and used ? Discuss with examples in Java. 10

(b) Explain method overriding in Java with an example. 6

3. Explain the following briefly with suitable examples :

(a) Differentiate between Object-Oriented approach and procedure oriented approach 10

(b) Benefits of polymorphism in Java 6

UNIT – II

4. (a) Define constructor ? How is it useful and used ? Explain its types with examples in Java. 10

(b) Explain how objects are used as parameters with examples in Java. 6

5. Describe the following with examples : 16

(i) Use, types and advantages of polymorphism in Java.

(ii) Types of inheritance in Java

UNIT – III

6. (a) Define package ? How is it used and useful ? Explain its types with Java examples. 8

(b) Explain exception and its handling with suitable examples in Java. 8

7. Explain the following with examples :

(i) Exception subclasses in Java and their benefits 8

(ii) Use and benefits of abstract classes in Java 8

UNIT – IV

8. (a) Define string ? How is it used and useful ? Discuss its operations and benefits with examples in Java. 10

(b) Explain thread priorities in Java with suitable examples. 6

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97693

BCA 6th Semester
Examination – July, 2021

ARTIFICIAL INTELLIGENCE

Paper : BCA-308

Time : Three 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. Answer the following questions briefly : $2 \times 8 = 16$

(a) What is predicate ?

(b) Define knowledge representation.

(c) Explain Hill climbing.

(d) Discuss importance of logic briefly.

(e) Describe knowledge acquisition.

(f) Define knowledge base.

(g) What do you mean by NLP ?

(h) Define explanation based learning.

UNIT – I

2. (a) What is best first search ? Explain its use and importance with examples. 8

(b) Explain problem reduction technique and its merits with suitable examples. 8

3. Explain the following briefly with suitable examples :

(a) Production system 4

(b) Issues in design of search problem 4

(c) Role of AI in problem solving 4

(d) Constraint satisfaction and its uses 4

UNIT – II

4. (a) What is computable function ? How is it useful and used ? Explain with an example. 8

(b) Describe the role of various issues in knowledge representation with examples. 8

5. Describe the following with examples :

(a) Knowledge representation schemes and their relative merits. 8

(b) Representing simple facts in logic. 8

UNIT – III

6. (a) Define syntactic processing. How is it used and useful ? Explain with examples. 8

(b) Explain learning by taking advice with examples. 8

7. Explain the following with examples :

(a) Pragmatic processing and its merits 8

(b) Role of Learning in problem solving 8

UNIT – IV

8. (a) Define expert system. Explain its importance with examples. 8

(b) Describe domain specific knowledge with suitable examples. 8

9. Explain the following with examples :

(a) Architecture and advantages of an expert system 8

(b) Expert system and its applications 8

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BCA 6th Semester
Examination – July, 2021

INTRODUCTION TO .NET

Paper : BCA-309

Time : Three 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. Write short notes on the following : $2 \times 8 = 16$

(a) CLS.

(b) Metadata

(c) Symbolic Constants

(d) Boxing and Unboxing

(e) Reference Types

(f) Bit Wise Operators

(g) Destructors

(h) Stream Class

UNIT – I

2. (a) Define the Frame work of .Net. 8

(b) Describe the different features of .Net. 8

3. (a) Explain the Architecture of .Net platform with diagram. 8

(b) Define Type and Objects in .Net. 8

UNIT – II

4. (a) Differentiate between private and shared Assembly and Static and Dynamic Assembly. 8

(b) Define the Class Libraries in .Net. 8

5. (a) Write down the different characteristics of C#.

(b) Explain different types of Literals in C#.

(c) Distinguish between write () and write line methods in C#. 16

UNIT – III

6. (a) What do you mean by Operators ? Explain all operators used in C#. 8

(b) Explain types of Repetitive structures of C# with Syntax and example. 8

7. (a) What do you mean by Function Overloading ? Define Function overloading with suitable program. 8

(b) What do you mean by constructor ? Define its characteristics and types of constructor. 8

UNIT – IV

8. (a) What do you mean by interface ? How is interface used in Inheritance. Show with suitable example. 8

(b) Explain the Exception Handling Mechanism used in C# with example. 8

9. (a) What do you mean by Polymorphism ? Define its type with example.

(b) Describe class and interface.

(c) Explain Abstract and Sealed class. 16

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9. Explain the following with examples :

(a) Architecture of an expert system

(b) Applications of expert system in education 8,8

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B.C.A. 6th Semester (Reappear) Examination, March-2021

ARTIFICIAL INTELLIGENCE

Paper-BCA-308

*Time : **Three** 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 :– Question No. **1** is compulsory. Attempt four more questions, selecting *one* question from each Unit.

1. Answer the following questions briefly :

(a) What is AI ?

(b) List *two* major applications of problem reduction.

(c) Explain best first search with an example.

(d) Discuss logic with an example.

(e) Describe knowledge acquisition in few lines.

(f) Differentiate between knowledge base and database.

(g) Write the use and advantages of NLP.

(h) Explain applications of explanation based learning. 2×8=16

Unit–I

2. (a) Define Hill climbing. How is it useful and used ? Discuss with examples.

   (b) Discuss problem reduction technique with an example. 8,8

3. Explain the following briefly with suitable examples :

   (a) Problem characteristics

   (b) Issues in design of search problem

   (c) Use of AI in problem solving

   (d) Constraint satisfaction 4×4=16

Unit–II

4. (a) Define Predicate Logic. How is it useful and used ? Explain with an example.

   (b) Explain the various issues in knowledge representation with examples. 8,8

5. Describe the following with examples :

   (a) Knowledge representation schemes

   (b) Representing simple facts in logic 8,8

Unit–III

6. (a) What is Semantic Processing ? How is it used and useful ? Explain with examples.

   (b) Explain induction based learning with examples. 8,8

7. Explain the following with examples :

   (a) Pragmatic processing

   (b) Learning in problem solving 8,8

Unit–IV

8. (a) What are expert systems ? How are these used and useful ? Discuss with examples.

   (b) Explain forward chaining with suitable examples. 8,8

(ii) Compare the implementation of For loop and Foreach statement with appropriate examples.

7. (i) List different method modifiers along with their respective description, provided by the C#.

(ii) What is the operator overloading ? Give a small snippet representing the Unary operator overloading.

Unit–IV

8. (i) Elaborate how overriding methods are different from Hiding methods used in inheritance.

(ii) Discuss how class inheritance can be prevented in C# language with proper examples.

9. (i) Illustrate any *four* features provided by C# that can be used for automatic memory management.

(ii) Elaborate the use of finally statement in the exception hierarchy in C# with appropriate examples.

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Total No. of Questions : **9**] [Total No. of Pages : **4**

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B.C.A. 6th Semester (Reappear) Examination, March-2021

INTRODUCTION TO .NET

Paper-BCA-309

*Time : **Three** 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 :– Question No. **1** is compulsory. Attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

1. (i) Briefly define the concept of namespaces used in .Net environment.

(ii) List down different roles performed by the Common Language Specification in .Net Framework.

(iii) Why metadata is considered as an important component of .Net ?

(iv) Write a short note on the use of class libraries in .Net.

(v) Define the operator's associativity used in C# language.

(vi) What do you mean by the implicit type conversion used in C# language ?

(vii) Differentiate between run time and compile time errors.

(viii) List down any *four* similarities between a class and an interface.

Unit–I

2. (i) Explain in detail the different components of .Net architecture and their respective roles.

(ii) What is the Web Service ? How is it achieved using the .Net Strategy ?

3. (i) How Common Language Runtime (CLR) provides the cross language interoperability to the programmers ?

(ii) What do you understand by the Framework Base Classes ? Name the namespace which contains the complete framework base class component. List any *five* uses of Framework Base class in .Net environment.

Unit–II

4. (i) Why do we use the 'using' directive and the 'alias' keyword ? Explain with the help of appropriate examples.

(ii) Discuss the basic classification of different C# data types on the basis of their storage and in the assignment statements.

5. (i) Discuss how the C# variables can be bounded to have a fix value. Explain with the help of syntax and examples.

(ii) Differentiate between output and static variables with appropriate examples.

Unit–III

6. (i) What is the Fall through in Switch statement ? How can it be helpful to the programmer ? Explain.