(6 pages) **Reg. No. :** .....

Code No. : 20154 E **Sub. Code : SEIT 6 C**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Sixth Semester

Information Technology – Major Elective

INTERNET SECURITY

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. What is the primary goal of computer security?
   (a) Ensuring 100% system uptime
   (b) Preventing all types of attacks
   (c) Balancing security and usability
   (d) Eliminating all software vulnerabilities

2. What is the primary purpose of a security policy in information security?

   (a) To implement the latest security tools.

   (b) To achieve 100% system uptime

   (c) To define rules and guidelines for protecting information

   (d) To detect all types of cyber threats

3. What does the term “malware” stand for?

   (a) Malicious Software

   (b) Managed Reliability

   (c) Memory Allocation Resources

   (d) Mainframe Architecture

4. What attack involves deceiving individuals into performing actions or divulging confidential information through manipulation?

   (a) Social Engineering

   (b) Botnet

   (c) SQL Injection

   (d) Spoofing

5. Which type of malware spreads rapidly by exploiting vulnerabilities in a network, often without any user interaction?

(a) Virus (b) Trojan Horse

(c) Worm (d) Ransomware

6. Which of the following can spread by attaching itself to other executable files and requires a host program to replicate and spread?

(a) Worm (b) Virus

(c) Spyware (d) Rootkit

7. What is the primary purpose of a firewall in network security?

(a) Sending and receiving emails

(b) Filtering and controlling network traffic

(c) Hosting websites

(d) Encrypting data

8. How can a proxy server improve privacy for users?

(a) By collecting and storing user data

(b) By replacing user data with random information

(c) By encrypting user data

(d) By revealing user IP addresses

9. What is the main goal of cryptography?

(a) Hiding the existence of data

(b) Protecting data from unauthorized access

(c) Ensuring fast data transmission

(d) Increasing data storage capacity

10. Which encryption method uses a pair of keys: public and private keys?

(a) Symmetric Encryption

(b) Asymmetric Encryption

(c) Hashing

(d) Steganography

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the components of security policy.

Or

(b) What is security policy? Why do we need security?

12. (a) Write short notes on information leakage.

Or

(b) Give account on Botnet.

13. (a) How to prevent your system from Trojans? Explain.

Or

(b) What is malicious software? Compare Virus, Worms and Trojan horse

14. (a) What do you mean by default-allow, default-deny policies?

Or

(b) Distinguish between Packet spoofing and Packet sniffing.

15. (a) Explain the terminologies used in Encryption.

Or

(b) Compare and contrast between asymmetric and symmetric cryptography.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) List and explain the strategies for securing network.

Or

(b) Summarize security plan in detail.

17. (a) Discuss in detail classification of attacks.

Or

(b) What is DoS Attack? Discuss the various forms of DoS attack.

18. (a) Discuss different classes of viruses.

Or

(b) What is Trojan horse? Show the structure diagram of it and explain its types.

19. (a) Why do we need firewall? Show its architecture and explain.

Or

(b) Explain the advantages and disadvantages of packet filtering in detail.

20. (a) Briefly explain about transposition ciphers with example.

Or

(b) Discuss Diffie Hellman key exchange algorithm and problems associated with it.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20131 E **Sub. Code : SMIT 41/ SMCT 41/AMIT 41/ AMCT 41**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fourth Semester

Information Technology/Computer Science and Information Technology – Core

JAVA PROGRAMMING

(For those who joined in July 2017-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Multidimensional array is also called _____

(a) matrix (b) list

(c) vector (d) stack

2. Which one of the following control statement used for multiple condition checking

(a) for (b) if else

(c) switch (d) while

3. The class members are accessed by using

(a) object (b) variable

(c) this (d) static

4. Which one of the following member accessed outside of the class

(a) public (b) protected

(c) private (d) static

5. String class is in ———————— package.

(a) java.io (b) java.lang

(c) java.util (d) java.applet

6. The base class properties and methods are derived from derived class is known as

(a) abstraction (b) polymorphism

(c) unheritance (d) encapsulation

7. Suspend a thread for a period of time ———————— method is used.

(a) init() (b) isAlive()

(c) join() (d) sleep()

8. Applet skeleton ———————— method to be called first.

(a) init() (b) start()

(c) paint() (d) stop()

9. The component is resized ———————— interface is used.

(a) container Listener (b) component Listener

(c) item Listener (d) focus Listener

10. The default layout of the frame is

(a) flow Layout (b) grid Layout

(c) card Layout (d) border Layout

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write short notes on type casting.

Or

(b) Write a Java program to biggest among three numbers.

12. (a) Write short notes on finalize() method.

Or

(b) Write short notes on command line arguments.

13. (a) Write short notes on final with inheritance.

Or

(b) Discuss access specifier in Java.

14. (a) Write short notes on thread states.

Or

(b) Discuss the following

(i) paint ()

(ii) repaint ()

15. (a) Write short notes on Text area control.

Or

(b) Write short notes on Flow Layout.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What is array? Discuss its types.

Or

(b) Write short notes on

(i) continue

(ii) break

17. (a) Discuss constructor overloading with an example.

Or

(b) Write short notes on recursion with an example.

18. (a) How do you implement multiple inheritance in java? Discuss.

Or

(b) Write short notes on

(i) method overriding

(ii) abstract class.

19. (a) Write a java program to create multithreading using thread class.

Or

(b) Discuss the following

(i) input stream

(ii) output stream.

20. (a) Discuss the following

(i) event class

(ii) event listener interface.

Or

(b) Write a applet program to design notepad.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20132 E **Sub. Code : SMIT 42/ SMCT 42/AMIT 42/ AMCT 42**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fourth Semester

Information Technology/Computer Science and I.T – Core

OPERATING SYSTEM

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is open source software?

(a) UNIX (b) LINUX

(c) WINDOWS (d) both (a) and (b)

2. The innermost layer of the operating system close to the hardware and which control it in the

   (a) Application Program

   (b) Kernel

   (c) Graphical User interface

   (d) Hardware layer

3. Which state of a process defined "The process has finished execution"?

   (a) Running (b) Waiting

   (c) Ready (d) Termination

4. Which of the following is/are available in the Process Control Block (PCB)?

   (a) List of open files (b) Process state

   (c) Process ID (d) All the above

5. The portion in any program which access a shared resource is called as

   (a) Critical section (b) Non-critical section

   (c) Exit section (d) Entry section

6. Which one of the following is the deadlock avoidance algorithm?

(a) Banker's algorithm

(b) Round Robin algorithm

(c) Elevator algorithm

(d) Karns' algorithm

7. Each process consists of fixed size component called

(a) Segment (b) Page table

(c) Pages (d) All the above

8. Virtual memory is normally implemented by

(a) Demand paging (b) Buses

(c) Virtualization (d) All the above

9. The scheduling priority value can be changed using ———————— system call.

(a) Clone (b) Kill

(c) Nice (d) Exec

10. Which of the following is not a disk scheduling algorithm

(a) FCFS (b) SSTF

(c) SCAN (d) LRV

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choose either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe briefly distributed processing and clustered system.

Or

(b) Describe the steps involved in 'Booting'.

12. (a) What do you mean by PCB? Where is it used? What are it contents?

Or

(b) Differentiate Preemptive and non-preemptive scheduling and also explain the priority based scheduling with neat diagram.

13. (a) What are semaphore? How do they implement mutual exclusion?

Or

(b) Why deadlock state more critical than starvation? Describe resource allocation graph with a deadlock.

14. (a) Write about Least Recently Used page replacement algorithm with an example.

Or

(b) Differentiate contiguous and non-contiguous memory management.

15. (a) Write notes on chained and indexed allocation schemes.

Or

(b) Write short note on LINUX file system.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choose either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the different services of operating system with neat diagram.

Or

(b) What are the uses of system calls and explain briefly about the user's view of the operating system.

17. (a) Discuss the different multithreading models along with their issues.

Or

(b) Define process. Explain various steps involved in change of a process state with process state transition diagram

18. (a) What is a producer consumer problem? Explain the solutions to the product consumer problem.

Or

(b) Explain deadlock detection algorithm with an example.

19. (a) Explain implementation of virtual memory through demand paging.

Or

(b) What is paging? Discuss the paging model of logical and physical memory.

20. (a) Explain SSTF and C-SCAN disk scheduling algorithm with neat examples.

Or

(b) Explain briefly about the memory management in LINUX OS.

———————

(6 pages)

Reg. No. : .....

Code No. : 20137 E **Sub. Code : SMIT 61/ SMCT 61**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Information Technology / Computer Science and IT — Core

DATA COMMUNICATION AND NETWORKING

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A set of rules that governs data communication
   (a) Protocols (b) Standards
   (c) RFCs (d) None of the above

2. Physical or logical arrangement of network is
   (a) Topology (b) Routing
   (c) Networking (d) None

3. In which topology there is a central controller or hub?

(a) Bus (b) Mesh

(c) Ring (d) Star

4. _____ indicates the direction of flow of information.

(a) Switching mode

(b) Multiplexing

(c) Transmission mode

(d) Packets

5. Three or more devices share a link in _____ connection.

(a) Unipoint (b) Multi point

(c) Point to point (d) None

6. CRC is a technique use for _____.

(a) Error Correction

(b) Error Detection

(c) Single Error Detection

(d) Single Error Correction

7. In _____ each packet of a message need not follow the same path from sender to receiver.

(a) Circuit switching

(b) Message switching

(c) A virtual approach to packet switching

(d) The datagram approach to packet switching

8. In distance vector routing algorithm, the routing tables are updated ————————.

(a) By exchanging information with the neighbours

(b) Automatically

(c) Using the backup database

(d) By the server

9. In closed loop congestion control techniques, the decisions are based on the

(a) concept of a feedback loop

(b) concept of a forward loop

(c) concept of current state of network

(d) none of these

10. Terminal are required for

(a) Batch processing

(b) Real time processing

(c) Both

(d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain different types of network topology?

Or

(b) What is computer network? What are the difference between LAN and WAN?

12. (a) What is IEEE standard protocol? Explain any two protocols?

Or

(b) What is multiplexing? Why we use multiplexing?

13. (a) Explain checksum technique for error detection with example?

Or

(b) What are the different types of errors?

14. (a) Difference between Narrowband and Broadband ISDN.

Or

(b) What are the services provided by ISDN?

15. (a) Explain about frame relay?

Or

(b) Explain about Leaky Bucket Algorithm?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write about the interfaces in computer network?

Or

(b) Explain briefly about line configuration?

17. (a) Explain various techniques of multiplexing?

Or

(b) Discuss about guided and unguided media?

18. (a) Explain VRC and LRC with example?

Or

(b) Explain about flow control?

19. (a) Explain in briefly about circuit switching?

Or

(b) Explain in briefly about packet switching?

20. (a) Define Congestion control and its algorithm?

Or

(b) Explain routing algorithms?

———————

(6 pages)

Reg. No. : .....

Code No.: 20138 E **Sub. Code: SMIT 62/ SMCT 62**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Information Technology / Computer Science and I.T.

MULTIMEDIA TECHNOLOGY

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is the characteristic of a multimedia system?

   (a) High storage

   (b) High data rates

   (c) Both (a) and (b)

   (d) None of the above

2. What is major benefit of using multimedia / hyper media in learning?

   (a) In makes it possible for students to understand how they learn

   (b) It prepares many students for careers in film and theater

   (c) It allows students a variety of ways to show their abilities

   (d) It increases motivation for learning

3. Which file creates a perfect reproduction of the original images?

   (a) Shockwave

   (b) NX View

   (c) GIF

   (d) JPG

4. In Audio and Video compression, each frame is divided into small grids, called picture elements or _____.

   (a) Frame

   (b) Packets

   (c) Pixels

   (d) Mega pixels

5. What does AIFF stands for?

   (a) Audio Interchange File Format

   (b) Audio Interchange File Folder

   (c) ASCII Interchange File Format

   (d) Audio Internet File Format

6. Which one of the following audio formats was developed by Microsoft?

   (a) AIFF

   (b) MIDI

   (c) Real Audio

   (d) WAV

7. Interlearing the audio and video segment of a video clip together in a data file is

   (a) Flare

   (b) Flattering

   (c) Hot spot

   (d) Helical scan

8. A video consists of a sequence of

   (a) Frames

   (b) Signals

   (c) Packets

   (d) Slots

9. How many steps are involved in creation of 3D animation process?

(a) 2 (b) 3

(c) 4 (d) 5

10. Which compressions provide some loss of quantity?

(a) Lossy

(b) Loss less

(c) Cell based

(d) Object based

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain about hardware and software requirements.

Or

(b) Explain about insertion and compression of test.

12. (a) Explain about scanner.

Or

(b) Explain about image types.

13. (a) Write a short note on sound and acoustics.

Or

(b) Explain about sound card.

14. (a) Explain about digital video.

Or

(b) Explain about video file formats.

15. (a) Explain about types of animation.

Or

(b) Explain about principles of animation.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about characteristics of multimedia.

Or

(b) Explain about text file formats.

17. (a) Explain about basic steps of digital image processing.

Or

(b) Explain about image file formats.

18. (a) Explain about types and characteristics of sound.

Or

(b) Explain about audio file formats.

19. (a) Explain about analog video camera.

Or

(b) Explain about video editing software.

20. (a) Explain about computer assisted animation.

Or

(b) Explain about MPEG - 2 Audio and MPEG - 2 video.

———————

(6 pages) **Reg. No. :** .....

Code No.: 20139 E **Sub. Code: SMIT 63/ SMCT 63/ AMIT 63/ AMCT 63**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Information Technology/ Computer Science and Information Technology – Core

.NET PROGRAMMING

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The software programs written in .NET are executed in the execution environment, which is called

   (a) CTS (b) DLL

   (c) COM (d) CLR

2. Which set of symbols are used to signify the presence of ASP.NET code?

(a) <@> (b) <#>

(c) <$> (d) <%>

3. Name the control gives the user an input area on an HTML form

(a) Button (b) Text Field

(c) Image (d) Reset

4. Identify the control an input area on an HTML form, although any characters typed into this field are displayed as asterisks

(a) Radio Button (b) Password Field

(c) Submit (d) Table

5. ———————— allows ASP.NET to repopulate form fields on each postback to the server, making sure that a form is not automatically cleared when the user hits the submit button.

(a) ViewState (b) Buffer

(c) Spam (d) Stack

6. What are the client-side state management options that ASP.NET supports?

(a) Application (b) Session

(c) Query string (d) Logging

7. Which of the following type of object has the Generate Dataset method?

(a) Adapter object (b) Connection object

(c) Database object (d) Dataset object

8. Which of the following is specified by the DataSource Property?

(a) Connection object (b) DataAdapter object

(c) Database field (d) Dataset object

9. In an XML document, a tag is a markup construct that starts with ———— and ends with ————.

(a) <,> (b) <!--, -->

(c) <#,> (d) @, @

10. In XML, DTD stands for

(a) Document Type Declaration

(b) Data Type Definition

(c) Document Type Definition

(d) Document to Declaration

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) State the characteristics of CLR.

Or

(b) Enumerate the Scope and Accessibility in .NET.

12. (a) Examine the purpose of RequiredFieldValidator Control.

Or

(b) Summarize the advantages of web controls.

13. (a) Write note on viewstate.

Or

(b) How to use querystring? Explain

14. (a) Analyze the methods supported by DataRow.

Or

(b) Describe the usage of SQL SELECT statement.

15. (a) Illustrate the features of XSLT.

Or

(b) Comment on Security Strategies in ASP.NET.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the .NET framework.

Or

(b) Enumerate the Data types and Conditional structures in NET languages.

17. (a) Demonstrate the working of CSS in web development.

Or

(b) Explain the navigation control in detail.

18. (a) How information is transferred using QueryString? Explain.

Or

(b) Express the error handling operations in ASP.NET.

19. (a) Discuss the features of ADO.NET.

Or

(b) How to create data list control in ASP.NET? Explain with an example.

20. (a) Examine the steps needed for creating Web Services.

Or

(b) Explain the usage of Data caching.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20145 E **Sub. Code : SNIT 4 A/ SNCT 4 A/ANIT 41/ ANCT 41**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023

Fourth Semester

Information Technology / Computer and I.T. – Non Major Elective

BASIC PROGRAMMING DESIGN

(For those who joined in July 2017 – 2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Data types are differed on basis of
   (a) way of storage
   (b) type of operations
   (c) type of operators used
   (d) both (a) and (b)

2. In high-level language Pascal, area is calculated as

   (a) 100 Area = Width*Length

   (b) 100 Area : Width*Length

   (c) Area = Width*Length

   (d) Length 100 : area*20 width

3. The symbol denotes ————————

   (a) I/O (b) Flow

   (c) Terminal (d) Decision

4. The process of drawing a flowchart for an algorithm is called ————————

   (a) Performance

   (b) Evaluation

   (c) Algorithmic Representation

   (d) Flowcharting

5. A ———————— is a connector showing the relationship between the representative shapes.

   (a) line (b) arrow

   (c) Process (d) box

6. A ———————— is diagram that depicts the flow of a program.

(a) Algorithm (b) Hash Table

(c) Graph (d) Flowchart

7. Subscripted variable is any type such as

(a) .Int (b) .Float

(c) Int, float or char (d) Char

8. An array is also known as ————————

(a) Subscripted variable

(b) Collective array

(c) Ordinary variable

(d) Similar Quantities variable

9. What are the advantages of arrays?

(a) Objects of mixed data types can be stored

(b) Elements in an array cannot be sorted

(c) Index of first element of an array is 1

(d) Easier to store elements of same data type

10. In general, the index of the first element in an array is ————————

(a) 0 (b) –1

(c) 2 (d) 1

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is algorithm? Explain Characteristics of algorithm.

Or

(b) Write note on Advantages of flowchart.

12. (a) What are elementary concepts of flowcharts?

Or

(b) Comment on Constants and variables.

13. (a) Draw the flowchart to find sum of two numbers.

Or

(b) Draw the flowchart to convert Celsius to Fahrenheit.

14. (a) Write basic concepts of subscripted variables.

Or

(b) What is one dimensional array.

15. (a) Comment on Multi-dimensional arrays.

Or

(b) Explain the concepts of data files.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Determine the type of Programming language.

Or

(b) Explain about selection of programming language.

17. (a) Explain the various types of flowchart.

Or

(b) What are the symbols used in flowchart.

18. (a) Draw the flowchart to find factorial of given number.

Or

(b) Draw the flowchart to find Multiplication table of given number.

19. (a) How to initiate and declare the one dimensional array? Explain.

Or

(b) Write short notes on subscripted variables.

20. (a) Write short notes on matrix operations.

Or

(b) Explain about File structure.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20152 E **Sub. Code : SEIT 6 A/ SECT 6 A**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Information Technology/Computer Science and I.T – Major Elective

WEB PROGRAMMING

(For those who joined in July 2017-2019)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What does the URL stand for?
   (a) Uniform Resource Locator
   (b) Universal Remote Link
   (c) Unifying Resource Locator
   (d) Unique Research Link

2. Which protocol is used to transfer web pages from a web server to a web browser?

   (a) HTTPS (b) SMTP

   (c) FTP (d) HTTP

3. In XHTML, all tags must be:

   (a) Uppercase (b) Lowercase

   (c) Capitalized (d) Italicized

4. What is the purpose of the "DOCTYPE" declaration in XHTML?

   (a) It defines the document's color scheme

   (b) It specifies the document's character encoding

   (c) It indicates the version of XHTML being used and triggers standards mode in the browser

   (d) It hides comments from the web browser

5. JavaScript is a:

   (a) Compiled language

   (b) Markup language

   (c) Scripting language

   (d) Object-oriented language

6. Which function is used to display a message in a popup dialog box in JavaScript?

   (a) alert() (b) confirm()

   (c) prompt() (d) message()

7. Which method is used to add elements to the end of an array?

(a) push() (b) append()

(c) addToEnd() (d) add()

8. How do you find the index of a specific value within an array?

(a) getIndex() (b) findIndex()

(c) searchIndex() (d) indexOf()

9. Which server-side programming concept allows storing data temporarily across multiple requests for the same user?

(a) Cookies

(b) Local storage

(c) Session management

(d) Web sockets

10. Which of the following server-side languages is commonly used for creating dynamic web pages?

(a) HTML (b) CSS

(c) PHP (d) JSON

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Distinguish between Firefox and Internet Explorer.

Or

(b) Give short notes on Blog.

12. (a) Draw and explain the structure of the XHTML webpage with an example.

Or

(b) Describe various kinds of style sheets with its syntax and example.

13. (a) Compare and contrast between break and continue structures.

Or

(b) Create a JavaScript to display whether given number is prime or not.

14. (a) Illustrate the concept of passing arrays to functions in Java script.

Or

(b) Discuss about XML Schema with an example.

15. (a) Write short notes on web servers.

Or

(b) Discuss web controls in detail.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Recall features of Firefox.

Or

(b) Write a detailed note on Web 2.0 Models.

17. (a) Summarize XHTML Tables in detail with suitable example.

Or

(b) Design a feedback form using XHTML and CSS.

18. (a) Discuss various selection and repetition structures available in Java script with examples.

Or

(b) Explain about Function definition, Function calling, Function parameter, return type with a suitable example in JavaScript.

19. (a) Write a detailed account on DOM collections.

Or

(b) How can both Internal and External DTDs be used in an XML File? Show with an Example.

20. (a) What is ASP.NET? Also explain the features of ASP.NET.

Or

(b) How do you connect PHP with MySQL? Explain with an example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20353 E **Sub. Code : AMIT 51/ AMCT 51**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Information Technology/Computer Science and I.T. – Core

SCRIPTING LANGUAGES

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. VBScript started as a ———————— scripting language.

   (a) Server-side (b) Client-side

   (c) Middleware (d) Firmware

2. VBScript could be used inside of ————————

(a) Chrome (b) Firebox

(c) Mozilla (d) Internet Explorer

3. ———————— is a place in the computer memory where your script holds a piece (or pieces) of information, or data.

(a) Constant (b) Comment

(c) Instruction (d) Variable

4. Identify the conversion function to transform the string value into an integer value

(a) CStr( ) (b) int( )

(c) str( ) (d) CInt( )

5. Name the tag used to enclose Java script in web document

(a) <img> (b) <a>

(c) <script> (d)

6. Which of the following can be used to call a JavaScript Code Snippet?

(a) Function/Method (b) Preprocessor

(c) Triggering Event (d) RMI

7. Which of the following is not an error in JavaScript?

(a) Missing of Bracket

(b) Division by zero

(c) Syntax error

(d) Missing of semicolons

8. In JavaScript, the most generic composite type from which all other composite types are derived is the

(a) Struct (b) Class

(c) Dim (d) Object

9. _____ is JavaScript for application-scale development.

(a) TypeScript (b) VBScript

(c) XML (d) XHTML

10. Which operator returns the data type of the Operand in Typescript.

(a) Sizeof (b) Typeof

(c) Log (d) Ternary

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Comment on features of VBScript.

Or

(b) Distinguish between VBScript and VBA.

12. (a) List the rules of variables naming in VBScript.

Or

(b) How to create constant in VBScript? Explain.

13. (a) How to add javascript to HTMLdocuments.

Or

(b) Write a Javascript program to print "Hello World from Javascript".

14. (a) Explain the basic data types in JavaScript.

Or

(b) Discuss the Input and Output in Javascript.

15. (a) Elucidate features of TypeScript.

Or

(b) How to define Ambients? Explain.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What is VBScript? How to add VBScript Code to an HTML Page?

Or

(b) Write note on Scripting Languages.

17. (a) Illustrate about Arithmetic and Logical operators in VBScript.

Or

(b) Elucidate the Multi-dimensional Array in VBScript.

18. (a) Discuss the event handlers Javascript.

Or

(b) Enumerate the Entity system for JavaScript.

19. (a) Illustrate with example explain flow control statements in JavaScript.

Or

(b) Explain looping statements in JavaScript with an example.

20. (a) Write note on Arrays in TypeScript.

Or

(b) How to create modules in Typescript? Explain.

———————

(6 pages)

Reg. No. : .....

Code No.: 20357 E **Sub. Code: AMIT 61**

B.Sc. (CBCS)DEGREE EXAMINATION,
NOVEMBER 2023.

Sixth Semester

Information Technology – Core

MOBILE COMPUTING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— is the segment of the market for mobile and wireless devices which are growing most rapidly network.

   (a) Digital cellular

   (b) Data cellular network

   (c) Data cell net

   (d) Digital code net

2. Which of the following is not an example of wireless communication?

   (a) Wi-Fi

   (b) Mobiles

   (c) Landline

   (d) Wireless Computer Parts

3. A GSM system that has been introduced in European countries for railroad systems is _____

   (a) GSM-Mail (b) GSM-Rail

   (c) GSM-Signal (d) OSM-System

4. A _____ is connected to the GSM public land mobile network.

   (a) mobile station MS

   (b) mode station MS

   (c) mobile system MS

   (d) mobile signal MS

5. A useful service for very simple message transfer is the _____

   (a) short message service

   (b) short mail service

   (c) short medium

   (d) short mode service

6. A GSM system consists of ———— subsystems.

(a) 2 (b) 3

(c) 4 (d) 2

7. Data is transmitted in to small portions called ————

(a) slots (b) burst

(c) frame (d) interface

8. The two basic settings for WLANs are ————

(a) infrastructure based

(b) Adhoc based

(c) infrared based

(d) infrastructure and Adhoc based

9. The current www in the internet offers web pages with the help of ———— pages.

(a) HTTP and web

(b) FTP and HTTP

(c) HTML and web servers

(d) HTTP

10. Which of the following is the drawback for cordless telephones?

(a) Security

(b) Wireless technology

(c) Limited coverage area

(d) Mobile

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Elaborate the frequency shift keying in modulation.

Or

(b) Bring out the additional signal propagation effects.

12. (a) Describe the hidden and exposed terminals in MAC.

Or

(b) Write down the PRMA packet reservation multiple access.

13. (a) Explain the advantages of satellite communication.

Or

(b) Summarize the DVB for high-speed internet access.

14. (a) Enumerate the alternative metrics in mobile ad-hoc networks.

Or

(b) Point out the protocol architecture of IEEE 802.11.

15. (a) What are the basic problem for distributed file systems? Explain.

Or

(b) State the reasons for bandwidth and delay in HTTP.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Analysis the functions of frequency division multiplexing.

Or

(b) Outline the direct sequence spread spectrum.

17. (a) Examine the time division multiplexing for multiple access and duplex.

Or

(b) What are the comparison of SDMA, TDMA, FDMA, and CDMA mechanisms? Explain.

18. (a) Draw and explain the typical satellite system for global mobile telecommunications.

Or

(b) Compare the infrared and radio transmission in wireless LAN.

19. (a) Evaluate the dynamic host configuration protocol.

Or

(b) Discuss the tunneling and encapsulation in mobile IP.

20. (a) Enumerate how the indirect TCP segments a TCP connection.

Or

(b) Determine the components and interface of the WAP 1 .x architecture.

———————

(6 pages) **Reg. No. :** .....

Code No.: 20359 E **Sub. Code: AMIT 62/ AMCT 62**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Information Technology / Computer Science and Information Technology – Core

GRAPHICS AND MULTIMEDIA TECHNOLOGY

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— stores the picture information as a charge distribution behind the phosphor-coated screen.

   (a) Cathode ray tube

   (b) Direct-view storage tube

   (c) Flat panel displays

   (d) 3D viewing device

2. What is the disadvantage of the light pen?

   (a) It's shape

   (b) They cannot detect positions

   (c) Accurate reading

   (d) Cannot detect positions within black areas

3. On raster system, lines are plotted with

   (a) Lines

   (b) Dots

   (c) Pixels

   (d) None of the mentioned

4. We can generate the dashes in the various octants and the circle path with vertical path using

   (a) Circles (b) Circle symmetry

   (c) Circle simmetry (d) Curve slope

5. The basic geometric transformations are

   (a) Translation (b) Rotation

   (c) Scaling (d) All of the mentioned

6. Which of the following operation can be applied on a 3D object to zoom it in or out about any axis from its original position?

   (a) Translation (b) Scaling

   (c) Rotation (d) Shearing

7. Video is represented as a series of images formally known as

(a) pics (b) shots

(c) frames (d) snaps

8. The faster the frames are displayed, ————————

(a) the rougher the video appears

(b) the smoother the video appears

(c) it gets blurry

(d) none of the mentioned

9. JPEG format is useful when ————————

(a) there are so many colors in the picture

(b) there are not so many colors in the picture

(c) we want to show more brightness

(d) when we want to show haziness

10. What is the full form of GOP?

(a) Gigabyte of Pictures

(b) Generation of Photos

(c) Group of Pictures

(d) Generation of Pictures

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss about the elements of computer graphics.

Or

(b) Briefly explain about requirements of a graphical system.

12. (a) Explain in detail about polygon filling algorithm.

Or

(b) Discuss about ellipse drawing algorithm.

13. (a) Define 2D viewing with necessary theory.

Or

(b) Elucidate on vanishing points.

14. (a) Explain components of multimedia.

Or

(b) Define hypertext.

15. (a) Discuss about bitmaps.

Or

(b) Briefly explain audio file formats.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Discuss about raster scan CRT monitor.

Or

(b) Define random scan display services.

17. (a) Discuss in detail about the polygon clipping algorithm.

Or

(b) Explain Bresenham's line drawing algorithm.

18. (a) Explain translation in two dimensional transformation.

Or

(b) Expound on curves and surfaces.

19. (a) Illustrate various font design tools.

Or

(b) Discuss about multimedia applications.

20. (a) Explain image file formats with necessary theory.

Or

(b) Give a clear view on stages of multimedia project.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20360 E **Sub. Code : AAIT 41/ AACT 41**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fourth Semester

Information Technology/Computer Science and I.T

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A ———————— acts as the interface between data stored on the disk and its users.
   (a) relational data
   (b) database
   (c) database management systems
   (d) transaction

2. Relational databases relate data items purely based on their ————————.

(a) key (b) values

(c) constraints (d) concurrency

3. ———————— keyword used in update query.

(a) into (b) set

(c) alter (d) from

4. ———————— function is used to add 2 values.

(a) add (b) addition

(c) total (d) sum

5. The main drawback of the hierarchical model is ————————.

(a) lack of standardization

(b) poor performance

(c) high cost

(d) none of the above

6. E-R model was developed by ————————.

(a) Codd (b) Date

(c) Chen (d) Bachman

7. The nodes of the ———————— graph are the users.

(a) authorization (b) super user

(c) root user (d) main user

8. The file in DBMS is called as ———————— in RDBMS.

(a) console (b) schema

(c) table (d) objects

9. ———————— can be used to retrieve data from multiple tables.

(a) Embedded SQL (b) Dynamic SQL

(c) Joins (d) Views

10. Internal view provides information regarding the ————————.

(a) database

(b) organization of the database

(c) metadata

(d) data dependency

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Summarize the need of Entity-Relationship model.

Or

(b) What are the functions of database administrators? Explain.

12. (a) What do you mean by fourth normal form? Explain.

Or

(b) Describe the integrity constraints with example.

13. (a) Explain the salient features of SQL.

Or

(b) How will you create a table in SQL? Explain with example.

14. (a) Bring out the importance of password management.

Or

(b) Write down the structure of an object in relational databases.

15. (a) Differentiate between function and procedure.

Or

(b) How will you replace and dropping triggers in PL/SQL? Give example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the entities and entity sets with simple example.

Or

(b) Discuss the various types of data models with diagram.

17. (a) Illustrate the domain relational calculus with suitable example.

Or

(b) Write down the concept of third normal form.

18. (a) How will you perform simple tests against a list of values? Explain.

Or

(b) Elaborate the various types of data functions in SQL.

19. (a) Point out the purpose of nested tables in relational databases.

Or

(b) How will you enabling and disabling roles? Explain.

20. (a) Outline the implementation of packages in PL/SQL.

Or

(b) Illustrate the different categories of triggers in PL/SQL.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20361 E **Sub. Code : AEIT 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fifth Semester

Information Technology

Major Elective – PYTHON PROGRAMMING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which type of Programming does Python support?

   (a) object-oriented programming

   (b) structured programming

   (c) functional programming

   (d) all of the above

2. The correct extension of the Python file is?'

(a) .python (b) .pl

(c) .py (d) .p

3. All keywords in Python are in ————————.

(a) Capitalized

(b) Lower case

(c) UPPER CASE

(d) None of the mentioned

4. What will be the value of the following Python expression?

4 + 3% 5

(a) 7 (b) 2

(c) 4 (d) 1

5. The keyword that is used for function in Python language is ————————.

(a) Function (b) def

(c) Fun (d) Define

6. The order of precedence in python is ————————.

(a) Exponential, Parentheses, Multiplication, Division, Addition, Subtraction

(b) Exponential, Parentheses, Division, Multiplication, Addition, Subtraction

(c) Parentheses, Exponential, Multiplication, Division, Subtraction, Addition

(d) Parentheses. Exponential, Multiplication, Division, Addition, Subtraction

7. Which of the following functions is a built-in function in python

(a) factorial( ) (b) print( )

(c) seed( ) (d) sqrt( )

8. The use of id( ) function in python is ————————.

(a) Every object doesn't have a unique id

(b) Id returns the identity of the object

(c) All of the mentioned

(d) None of the mentioned

9. Identify the data type that is not available in Python programming?

(a) Tuples

(b) Lists

(c) Class

(d) Dictionary

10. Which one of the following is not a keyword in Python language?

(a) pass (b) eval

(c) assert (d) non local

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are Atoms in Python ? Explain.

Or

(b) Explain the structure of the python program in detail.

12. (a) Explain Break statement with an example.

Or

(b) Write about while loop with an example.

13. (a) Explain default argument with an example.

Or

(b) Explain how parameters and arguments are passed in function definition?

14. (a) Define Instant variable with example.

Or

(b) Write a note on Exception in Python.

15. (a) Write a python program using binary search.

Or

(b) Explain Selection sorting technique using python.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the role of Interpreter and compiler in python.

Or

(b) Write a brief note on Identifier in python.

17. (a) Write the syntax of for loop and find the output of the following code

```
numbers=[l,2,4,6, 11,20]
seq=0
for val in numbers:
seq=val*val
print(seq)
```

Or

(b) Explain about input and output statement with example.

18. (a) Briefly explain various data types available in python.

Or

(b) Explain various components of Function Definition.

19. (a) Discuss Super( ) Method with an example.

Or

(b) Explain various type of inheritance in detail.

20. (a) Creates Program for Linear Search using array.

Or

(b) Write a python program to plot a curve.

———————

(7 pages) **Reg. No. :** .....

Code No. : 20367 E **Sub. Code : AEIT 62**

B.Sc. (CBCS) DEGREE EXAMINATION,

NOVEMBER 2023.

Sixth Semester

Information Technology– Major Elective

E – GOVERNANCE

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. Which of the following is an example of e-governance infrastructure?

   (a) Social media

   (b) Cyber cafes

   (c) Mobile devices

   (d) All of the above

2. What is the role of data warehousing and data mining in c-governance?

   (a) To increase privacy and security of government data

   (b) To facilitate data sharing between government agencies

   (c) To support decision-making and policy development

   (d) To reduce government spending on technology

3. Which of the following is an example of a push model in c-governance?

   (a) E-filing of tax returns

   (b) Online voting

   (c) Social media engagement

   (d) Chatbots for customer support

4. Where in the organizational hierarchy do the greatest obstacles to successful information governance exist?

   (a) At the top level

   (b) In middle management

   (c) At the end-user level

   (d) In Top management

5. The Lifecycle of e-Governance projects is a continuous circular chain of activities, divided into phases not include ————————

(a) Initiation

(b) Planning and Implementing

(c) Operations and Monitoring

(d) Maintenance

6. Which of the following is not a stage in the development of e-governance?

(a) Transition phase

(b) Transformation phase

(c) Interaction phase

(d) Transaction phase

7. What is the benefit of using cloud computing in e-governance?

(a) Improved data security

(b) Decreased infrastructure costs

(c) Increased citizen participation

(d) Better access to government services

8. Which of the following is to not in the four pillars of e-Government _____

(a) People (b) Process

(c) Technology (d) Management

9. E-government is becoming more accepted as an important feature within government in many countries. What does it provide?

(a) The ability to gather taxes more efficiently

(b) The facility to securely communicate between governments and government departments

(c) Facilities for dissemination of information and online services at local and national levels

(d) All of the above

10. What is a key strategy for success in e-governance?

(a) Continuous improvement

(b) Centralization of power

(c) Technological complexity

(d) Resistance to change

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Summarize the advantages of e-government.

Or

(b) What are the difference between the e-government and e-governance? Explain

12. (a) Describe the government-to-Citizen-to-Government model.

Or

(b) Bring out the five maturity levels in e-governance.

13. (a) Differentiate between the network and computing infrastructure.

Or

(b) Explain the interoperability framework for e-governance.

14. (a) Elaborate the multiple legacy environments in e-government.

Or

(b) What are the types of threats? Explain.

15. (a) Show the prices of essential commodities.

Or

(b) Mention the applications of data mining in commerce.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Determine the present global trends of growth in e-governance.

Or

(b) Outline the online service delivery and electronic service delivery.

17. (a) Discuss on towards good governance through e-governance models.

Or

(b) Demonstrate the mobilization and lobby model.

18. (a) Identity the function of institutional infrastructural preparedness.

Or

(b) Analysis the advantages of human infrastructural preparedness.

19. (a) Draw and explain the security architecture of e-government.

Or

(b) Examine the ICT assets environment in model of security management.

20. (a) Determine the major areas in data warehousing.

Or

(b) Evaluate the applications of data mining in agriculture.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20368 E **Sub. Code : AEIT 63**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Sixth Semester

Information Technology – Major Elective

CYBER SECURITY

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is Cyber Security?

   (a) Cyber Security provides security against malware

   (b) Cyber Security provides security against cyber-terrorists

   (c) Cyber Security protects a system from cyber attacks

   (d) All of the mentioned

2. Which of the following is a component of cyber security?

(a) Internet Of Things (b) AI

(c) Database (d) Attacks

3. Which of the following is a type of cyber attack?

(a) Phishing (b) SQL Injections

(c) Password Attack (d) All of the above

4. Which of the following DDoS in mobile systems wait for the owner to trigger the cyber attack?

(a) Botnets (b) Programs

(c) Virus (d) Worms

5. When plain text is converted to unreadable format, it is termed as ————————

(a) Rotten text (b) Raw text

(c) Cipher-text (d) Ciphen-text

6. Conventional cryptography is also known as ———————— or symmetric-key encryption.

(a) Secret-key (b) Public key

(c) Protected key (d) Primary key

7. ———————— is the illicit transmission of data from inside an organization or personal system to an external location or recipient.

(a) Database hacking (b) Data leakage

(c) Data cracking (d) Data revealing

8. Compromising confidential information comes under ————————

(a) Bug (b) Threat

(c) Vulnerability (d) Attack

9. Sometimes ———————— anonymize them to perform criminal activities.

(a) Virus (b) Incident handlers

(c) Cyber-criminals (d) Ethical hackers

10. Which one of the following is a proper step in competitive intelligence data processing?

(a) Competitors' data compromising

(b) Data hacking

(c) Data analysis

(d) Competitors' data stealing

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Elaborate the need of computer security.

Or

(b) What are the security issues in web attacks? Explain.

12. (a) Describe the purpose of security in operating system.

Or

(b) Write down the implementation of wireless network security.

13. (a) Explain the cryptography in network security.

Or

(b) Distinguish between the data mining and big data.

14. (a) Point out the privacy concepts of cyberspace.

Or

(b) Determine the privacy on the web in cyberspace.

15. (a) Mention the security planning in cyber security.

Or

(b) Summarize the problems of cyber crime.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the need of access control and cryptography.

Or

(b) Compare the browser attacks and email attacks.

17. (a) Examine the threats in network communications.

Or

(b) Outline the problems of denial of service (DoS).

18. (a) Illustrate the intrusion detection and prevention systems.

Or

(b) What are the security requirements of databases? Explain.

19. (a) Describe the privacy impacts of emerging technologies.

Or

(b) Evaluate the implementation of Email security in cyberspace.

20. (a) Formulate the emerging technologies of cyber warfare.

Or

(b) Analysis the international laws in cyber security.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20525 E **Sub. Code : CMIT 11/ CMCT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

First Semester

Information Technology/Computer Science and I.T. – Core

INTRODUCTION TO INFORMATION TECHNOLOGY AND HTML

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. _____ is the use of computers to create, process, store retrieve and exchange all kinds of data.
   (a) Web technology
   (b) Information technology
   (c) Server technology
   (d) Domain technology

2. S-RAM refers to _____.

(a) Static Random access memory

(b) Smooth Random access memory

(c) Stand – alone Random access memory

(d) Safe Random access memory

3. The message is sent across internet connection using _____.

(a) HTTP (b) URL

(c) HTML (d) TCP/IP

4. _____ is a directory service that provides a mapping between the name of a host on the network.

(a) DNS (b) Internet

(c) IP address (d) None of the above

5. _____ refers to the way in which web pages are linked together.

(a) Hyper tag (b) HTML file

(c) Hypertext (d) HTML code

6. In HTML _____ lists are marked with bullets.

(a) Unordered list (b) Ordered list

(c) Description list (d) Alphabetic list

7. Which tag defines a hyperlink that is used to link one page to another?

(a) Anchor tag (b) Page tag

(c) Document tag (d) Paragraph tag

8. _____ tag is used to create scrollable text or image in a web page.

(a) Txtimg (b) Marquee

(c) Anchor (d) None of these

9. Which property is used to break the long words and wrap onto the next line?

(a) word-wrap (b) word-bound

(c) break-up (d) break-all

10. _____ is a stylesheet language used to change the layout of web pages and make it more attractive.

(a) XML stylesheet

(b) Stylesheet

(c) Cascading stylesheet

(d) WML

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about memory hierarchy.

Or

(b) Explain the various types of printers.

12. (a) What are the functions of a web server?

Or

(b) State the differences between relative URL and absolute URL.

13. (a) List down and explain the tags to format a HTML text.

Or

(b) Define lists? How definition list is used in HTML?

14. (a) What is the use of image maps in HTML?

Or

(b) How frames are created in HTML? Give an example.

15. (a) Explain the creation of grids in HTML with suitable tags.

Or

(b) Describe how colors are specified on HTML.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Give a detailed account on various careers in IT industry.

Or

(b) Explain the various types of input devices.

17. (a) Briefly explain the history of Internet.

Or

(b) Write short notes on the following:

(i) ISP

(ii) ISDN.

18. (a) List down and explain the basic tags in HTML.

Or

(b) What is an ordered list? Explain in detail.

19. (a) What is a hyperlink? Demonstrate how will you move from one web page to another with suitable example.

Or

(b) How a table is created in HTML? Explain with an example.

20. (a) Discuss the role of CSS selectors in designing a web page.

Or

(b) Explain how animations are applied to a web page using CSS transforms.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20526 E **Sub. Code : CMIT 21/ CMCT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Second Semester

Information Technology/Computer and Information Technology – Core

C PROGRAMMING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which is valid C expression?

   (a) int my_num = 100,000;

   (b) int my_num = 100000;

   (c) int my num = 1000;

   (d) int $my_num = 10000;

2. Which of the following cannot be a variable name in C?

(a) volatile (b) true

(c) friend (d) export

3. How many number of pointer (*) does C have against a pointer variable declaration?

(a) 7 (b) 127

(c) 255 (d) No limits

4. Which of the following is not possible statically in C' language?

(a) Jagged Array

(b) Rectangular Array

(c) Cuboidal Array

(d) Multidimensional Array

5. Which of the following return-type cannot be used for a function in C?

(a) char *

(b) struct

(c) void

(d) none of the mentioned

6. In C language, FILE is of which data type?

(a) int

(b) char *

(c) struct

(d) None of the mentioned

7. Which of the following will copy the null-terminated string that is in array src into array dest?

(a) dest = src;

(b) dest = src;

(c) strcpy(dest, src);

(d) strcpy(src, dest);

8. What is the maximum number of characters that can be held in the string variable char address line [40]?

(a) 38 (b) 39

(c) 40 (d) 41

9. A class D is derived from a class B, b is an object of class B, d is an object of class D, and pb is a pointer to class B object. Which of the following assignment statement is not valid?

(a) d = d; (b) b = d;

(c) d = b; (d) *pb = d;

10. Which one of the following is a loop construct that will always be executed once?

(a) for (b) while

(c) switch (d) do while

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) How will you writing a character in C? Give example.

Or

(b) List out the various types of operators in C with example.

12. (a) Explain the decision making with IF statement.

Or

(b) Write a note on GOTO statement with example.

13. (a) Discuss the writing string to screen in C.

Or

(b) Distinguish between the one dimensional arrays and two dimensional arrays.

14. (a) Describe the need for user defined functions.

Or

(b) Write a C program to find the reverse of a given string.

15. (a) What are the uses of pointer in C? How pointers work in programs?

Or

(b) Mention the steps to create and open a file in C language.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Elaborate the concept of identifier and the rules to be followed for forming an identifier.

Or

(b) Illustrate the bitwise operator used in C language.

17. (a) Develop a C program to find the Maximum and Minimum value in an array.

Or

(b) Compare the do.... while and while loop statement in C.

18. (a) How will you declare and initialize string variables? Explain.

Or

(b) How to initialize the elements in multidimensional array? Explain.

19. (a) Develop a C program to check whether a given year is leap year or not.

Or

(b) Explain how structures are defined in C.

20. (a) How the pointer variable declared and initialized? Explain.

Or

(b) Write a C program to find the biggest among given three numbers.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20527 E **Sub. Code : CMIT 31/ CMCT 31**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Information Technology/ Computer Science and I.T. – Core

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following refers to putting together essential features without including background details?

   (a) Abstraction (b) Encapsulation

   (c) Data hiding (d) Inheritance

2. The constants in C++ are also known as

   (a) Pre-processor (b) Literals

   (c) Const (d) None

3. In situations where we need to execute body of the loop before testing the condition, we should use

   (a) For loop (b) While loop

   (c) Do-while loop (d) Nested for loop

4. Which of the following feature is used in function overloading and function with default argument?

   (a) Encapsulation (b) Polymorphism

   (c) Abstraction (d) Modularity

5. Which is used to define the member of a class externally?

   (a) : (b) ::

   (c) # (d) !!$

6. What is syntax of defining a destructor of class A?

   (a) A (){ } (b) ~A () { }

   (c) A::A () { } (d) ~A () { };

7. Unary operators overloaded by means of a friend function, take ———————— reference argument.

(a) Zero (b) One

(c) Two (d) Three

8. Class X, class Y and class Z are derived from class BASE. This is ———————— inheritance.

(a) Hybrid (b) Multilevel

(c) Hierarchical (d) Single

9. Virtual functions are mainly used to achieve ————————

(a) Compile time polymorphism

(b) Interpreter polymorphism

(c) Runtime polymorphism

(d) Functions code polymorphism

10. Which of the following is the default mode of the opening using the if stream class?

(a) ios::in (b) ios::out

(c) ios::app (d) ios::trunk

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write the advantages of object oriented programming.

Or

(b) Explain the following with example.

(i) types of tokens

(ii) keywords

(iii) identifiers.

12. (a) Compare break statement with continue statement with example.

Or

(b) Explicate inline function with example program.

13. (a) Enumerate recursive member function with example.

Or

(b) Enumerate copy constructor with example.

14. (a) Delineate rules for overloading constructor.

Or

(b) Delineate single inheritance with example program.

15. (a) Diagnose pure virtual function with example.

Or

(b) Diagnose file operations with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Elucidate type casting with cout statement and member functions of istream class.

Or

(b) Elucidate the following

(i) basic data type

(ii) derived data type

(iii) user-defined data type

(iv) void data type.

17. (a) Discuss switch statement with an example program.

Or

(b) Discuss functions with example.

18. (a) Discuss array of objects with an example program.

Or

(b) Discuss in detail about constructors and destructors with an example program.

19. (a) Illustrate overloading unary operator with example program.

Or

(b) Enumerate arrays of classes with example.

20. (a) Analyze abstract class with example.

Or

(b) Analyze sequential file operation with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20528 E **Sub. Code : CMIT 41/ CMCT 41**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fourth Semester

Information Technology/Computer Science and Information Technology – Core

JAVA PROGRAMMING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Name the mechanism that binds together code and the data it manipulates, and keeps both safe from outside interference and misuse.

   (a) Inheritance (b) Polymorphism

   (c) Encapsulation (d) Abstraction

2. ———————— is a group of like-typed variables that are referred to by a common name.

(a) Variable (b) Literal

(c) Identifier (d) Array

3. ———————— keyword is used to refer to the current object in action.

(a) this (b) synchronized

(c) final (d) static

4. To define an object's behavior ———————— are created.

(a) instances (b) programs

(c) methods (d) tokens

5. In Java, to create a sub class, keyword ———————— is used in the class definition.

(a) int (b) extends

(c) float (d) create

6. Which of the following key words used to declare class variables and class methods?

(a) static (b) private

(c) public (d) protected

7. Which of the following blocks execute compulsorily whether exception is caught or not?

(a) catch (b) throw

(c) throws (d) finally

8. _____ method is defined in Graphics class, it is used to output a string in an applet.

(a) display( )

(b) print( )

(c) drawString( )

(d) transient( )

9. Which of these events will be generated if we close an applet's window?

(a) WindowEvent

(b) ActionEvent

(c) AdjustmentEvent

(d) ComponentEvent

10. Which of these methods are used to register a mouse motion listener?

(a) addMouse( )

(b) addMouseListener( )

(c) addMouseMotionListener( )

(d) eventMouseMotionListener( )

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Enumerate the Arithmetic operators in Java.

Or

(b) Comment on switch statement.

12. (a) Write note on Static.

Or

(b) Demonstrate the Access Control mechanism in Java.

13. (a) Illustrate the purpose of super keyword and super( ) method.

Or

(b) Elaborate the usage of Abstract Classes.

14. (a) Summarize the need for synchronized Statement.

Or

(b) Compare Byte Streams with Character Streams.

15. (a) Describe the commonly used Event Listener Interfaces.

Or

(b) How to create FlowLayout? Explain.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, by choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Examine the creation and accessing of an Array in Java.

Or

(b) Summarize the Looping statements with an example.

17. (a) Demonstrate the usage of Constructors and Method overloading.

Or

(b) Describe the basic principles of OOPS.

18. (a) How to create, implement and applying interfaces? Explain.

Or

(b) Explain the Method Overriding with an example.

19. (a) Express the skeleton of Applet Program.

Or

(b) Elaborate the features of Input and output stream.

20. (a) Discuss the AWT controls Buttons, Text box and Labels.

Or

(b) Write note on Delegation Event Model.

———————

(7 pages) **Reg. No. :** .....

Code No. : 20529 E **Sub. Code : CMIT 51/ CMCT 51**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Information Technology/Computer Science and Information Technology – Core

SOFTWARE ENGINEERING AND TESTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which framework is commonly used for process assessment and improvement in software engineering?

   (a) ISO 9001

   (b) Capability Maturity Model Integration (CMMI)

   (c) Six Sigma

   (d) Total Quality Management (TQM)

2. Which software process model is characterized by incremental and iterative development, with each iteration delivering a potentially shippable product?

   (a) Waterfall model

   (b) Agile model

   (c) V-Model

   (d) Spiral model

3. In requirements engineering, what is the purpose of requirement negotiation?

   (a) To avoid documenting requirements

   (b) To resolve conflicts and trade-offs among stakeholders

   (c) To finalize the project schedule

   (d) To prioritize technical tasks

4. What is the role of requirements monitoring during the software development process?

   (a) Developing use cases

   (b) Ensuring that requirements remain consistent and up-to-date

   (c) Writing code

   (d) User interface design

5. What is the role of architectural design in software development?

   (a) Writing code

   (b) Defining the high-level structure of the software system

   (c) Creating user interfaces

   (d) Conducting system testing

6. What is the primary focus of component-level design in software engineering?

   (a) Defining the overall system architecture
   (b) Designing individual software components
   (c) Creating user interfaces
   (d) Code optimization

7. What is a key benefit of integrating testing tools into the tester's work process?

   (a) Reducing the need for manual testing

   (b) Eliminating the need for documentation

   (c) Slowing down the testing process

   (d) Increasing development time

8. Why is training testers in tool usage important?

   (a) To reduce project costs

   (b) To increase the time allocated for testing

   (c) To ensure testers can effectively use testing tools

   (d) To eliminate the need for documentation

9. Why is testing in a multiplatform environment essential?

(a) It simplifies the testing process

(b) It reduces the need for regression testing.

(c) It ensures that the software functions correctly on different platforms and devices.

(d) It eliminates the need for compatibility testing

10. Which of the following best describes validation testing?

(a) It focuses on the correctness of the software code

(b) It involves assessing the software against its intended use

(c) It is primarily concerned with testing individual modules

(d) It is performed by developers during the coding phase

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the Agile Manifesto and its four core values. How do these values influence agile software development practices?

Or

(b) Explain the concept of Test-Driven Development (TDD) in Extreme Programming (XP). How does TDD contribute to software quality and development efficiency?

12. (a) Explain the concept of requirement negotiation and its importance in resolving conflicts and trade-offs among stakeholders. Provide an example of a situation where requirement negotiation can be beneficial.

Or

(b) Describe scenario-based modeling in the context of requirements engineering. Provide an example of a scenario-based method and explain how it helps in understanding and specifying system behavior.

13. (a) Discuss the key phases of the software design process and their significance.

Or

(b) Discuss the advantages and challenges of component-based development in software engineering.

14. (a) Explain the key factors that organizations should consider when selecting and installing software testing tools.

Or

(b) Describe the benefits of integrating testing tools into a tester's work process.

15. (a) Explain the advantages and disadvantages of rapid application development.

Or

(b) Discuss why ensuring that software meets user requirements and functions correctly is crucial for software quality.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the principles of the Unified Process (UP) and how it aligns with iterative and incremental software development. Describe the key phases in UP and their significance in managing software projects effectively.

Or

(b) Discuss one common software development myth and provide an example from the software development industry where believing in this myth had detrimental consequences.

17. (a) Discuss the challenges and risks associated with requirements elicitation in software development.

Or

(b) Explain how use cases are used to model system functionality in software development.

18. (a) Discuss the significance of architectural design in software development.

Or

(b) Explain the importance of user interface (UI) design in software development.

19. (a) Explain the software testing process in detail, covering all phases from test planning to test reporting.

Or

(b) Describe the benefits of integrating testing tools into the testers work process. How do these tools enhance productivity and the quality of testing?

20. (a) Distinguish between verification testing and validation testing in software testing.

Or

(b) Explain the importance of testing software in a multiplatform environment.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20530 E **Sub. Code : CMIT 52/ CMCT 52**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Information Technology/Computer Science and I.T

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer:

1. What is a relation in RDBMS?

   (a) Key

   (b) Table

   (c) Row

   (d) Data types

2. _____ deletes a data item from a database.

(a) Insert

(b) Drop

(c) Delete

(d) None of the mentioned

3. Which of the following is not a type of Normal Form?

(a) 1NF (b) 2NF

(c) 3NF (d) 6NF

4. When a relation contains an atomic value, it is a _____ relation.

(a) 1NF (b) 2NF

(c) 3NF (d) BCNF

5. What is the full form of SQL?

(a) Structured Query List

(b) Structure Query Language

(c) Sample Query Language

(d) Simple Query Language

6. Which of the following is not a valid SQL type?

(a) FLOAT (b) NUMERIC

(c) DECIMAL (d) CHARACTER

7. Which of the following is not a DDL command?

(a) TRUNCATE (b) ALTER

(c) CREATE (d) UPDATE

8. Which of the following are TCL commands?

(a) COMMIT and ROLLBACK

(b) UPDATE and TRUNCATE

(c) SELECT and INSERT

(d) GRANT and REVOKE

9. PL/SQL Variables are by default _____.

(a) Upper Case Sensitive

(b) Case Sensitive

(c) Not Case Sensitive

(d) Lower Case Sensitive

10. An SQL _____ refers to a program that retrieves and processes one row at a time, based on the results of the SQL statement.

(a) Cursor (b) View

(c) Function (d) Procedure

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Mention the Purpose of DBMS.

Or

(b) Write short notes on DBA.

12. (a) Discuss about Relational Algebra.

Or

(b) Explain – Database Integrity Constraints

13. (a) Explain Order by Clause in SQL.

Or

(b) Write notes on Outer Join.

14. (a) Discuss about Abstract Data Types in DBMS.

Or

(b) How to add password to a Role? – Explain.

15. (a) Mention the Uses of PL/SQL.

Or

(b) Discuss about the Cursor and its Uses.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about ER – Model.

Or

(b) Write detail notes on Data Base Languages.

17. (a) Discuss about First Normal Form.

Or

(b) Describe the Domain Key Normal Form.

18. (a) Write detail notes on DDL Statements in SQL.

Or

(b) Discuss about the Data Functions in SQL.

19. (a) Describe the Nested Tables and V arrays in SQL.

Or

(b) How to Revoke the Privilege from a Role?- Explain.

20. (a) Explain the PL/SQL — Exception handling.

Or

(b) Write detail notes on Functions & Procedures in PL/ SQL.

———————

(6 pages)

Reg. No. : .....

Code No.: 20531E **Sub. Code: CMIT 53/ CMCT 53**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fifth Semester

Information Technology / Computer Science and I.T. – Core

.NET PROGRAMMING

(For those who joined in July 2021-22)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the full form ASP?
   (a) Access Server Pages
   (b) Active Service Pages
   (c) Active Server Pages
   (d) Access Service Pages

2. ASP.NET is a _____.

   (a) Client-Side technology

   (b) Server-side technology

   (c) Both (a) and (b)

   (d) Middle ware Technology

3. Which of the following attribute must be set on a validator control for the validation?

   (a) ControlTovalidate

   (b) ValidateControl

   (c) ValidateToBind

   (d) ValidateBind

4. The CSS stands for _____.

   (a) Client Style Sheet

   (b) Cascading Style Sheet

   (c) Common Style Sheet

   (d) Cascading Simple Sheet

5. What is the purpose of the ViewState in ASP.NET?

   (a) To store user data

   (b) To store application settings and configuration information

   (c) To store web page content

   (d) To store state information for a control

6. Which of the following is NOT a type of validation control in ASP.NET?

   (a) RequiredFieldValidator

   (b) RangeValidator

   (c) RegularExpressionValidator

   (d) CheckBoxList

7. Which of the following is NOT a valid data source control in ASP.NET?

   (a) SqlDataSource

   (b) ObjectDatasource

   (c) FileDataSource

   (d) XmlDatasource

8. Which is the first event of ASP.NET page, when user requests a web page?

   (a) Init (b) Load

   (c) PreLoad (d) Preinit

9. What are the types of cookies?

   (a) Session cookies

   (b) Dummy cookies

   (c) Persistent cookies

   (d) Both (a) and (c)

10. What is default time of expire session in ASP.NET?

(a) 20 minute (b) 30 minute

(c) 40 minute (d) 60 minute

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List out the .Net Languages.

Or

(b) Write short notes on ASP. Net Applications.

12. (a) Discuss about Web Controls.

Or

(b) Explain — uses of CSS.

13. (a) Explain about Sessions.

Or

(b) Write notes on Tracing and Logging.

14. (a) Mention the uses of ADO.Net.

Or

(b) Write short notes on Data Grid.

15. (a) What is Caching? - Explain.

Or

(b) Compare XSD with XSLT.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss about Types Objects and Namespace in ASP.Net.

Or

(b) Mention the Steps to Build the ASP Webpage.

17. (a) Discuss about HTML Controls.

Or

(b) Describe the ASP.Net Data Controls.

18. (a) Write detail notes on Error Handling in ASP.Net

Or

(b) Discuss about ASP. Net Ajax.

19. (a) Describe the Overview of ADO.Net.

Or

(b) Compare Data Binding with Data List.

20. (a) Write detail notes on ASP. Net Security.

Or

(b) Discuss about XML and its Uses in Web Programming.

———————

Reg. No. : .....

Code No. : 20532 E **Sub. Code : CAIT 11/ CACT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

First Semester

Information Technology / Computer Science and I.T. — Allied

OFFICE AUTOMATION

(For those who joined in July 2021)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Microsoft word is ———————— software.
   (a) Application (b) Compiler
   (c) System (d) Programming

2. Ctrl + N is used to
   (a) Save Document (b) Open Document
   (c) New Document (d) Close Document

3. Which of the following is not a font style?

(a) Bold (b) Italics

(c) Regular (d) Superscript

4. Which enables us to send the same letter to different persons?

(a) Macros (b) Template

(c) Mail Merge (d) None of the above

5. Functions in MS Excel must begin with ————————.

(a) ( ) (b) =

(c) + (d) >

6. In Excel, Columns are labelled as ————————.

(a) A, B, C etc. (b) 1, 2, 3 etc.

(c) A1, A2 etc. (d) A1, A2, etc.

7. ———————— is not valid data type in MS Access.

(a) Auto number (b) Currency

(c) Memo (d) Picture

8. What can be the maximum length of a text field?

(a) 120 (b) 255

(c) 265 (d) 75

9. Which of the following is the file extension of the PowerPoint application?

(a) .ppt (b) .jpg

(c) .html (d) .docs

10. Which of the following shortcut key is used to start the slideshow?

(a) F5 key (b) F3 key

(c) F1 key (d) F6 key

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write any five word processor features.

Or

(b) How do you edit your document?

12. (a) How is Header and Footer set in your document?

Or

(b) Explain checking spelling in the document.

13. (a) Write about Formatting Toolbar.

Or

(b) Write any five Mathematical functions and explain.

14. (a) How to create Database in Access?

Or

(b) Write short note on Macros in Access.

15. (a) How to create a presentation?

Or

(b) Explain adding graphics, charts and tables in powerpoint.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe about changing the page size of a document.

Or

(b) Explain opening, saving and closing the document.

17. (a) Discuss about insert rows, columns and delete rows, columns in tables.

Or

(b) Discuss about MailMerge with example.

18. (a) Describe about formatting a spreadsheet.

Or

(b) Explain Graphs in Excel with example.

19. (a) Discuss about objects of a relational database.

Or

(b) Explain about working on tables in access.

20. (a) Illustrate about slide transition in detail.

Or

(b) Describe about Masters in Powerpoint.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20533 E **Sub. Code : CAIT 21/ CACT 21**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Second Semester

Information Technology / Computer and Information Technology — Allied

DIGITAL DESIGN

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Digital system consist of ———— types of circuits.
   (a) 2 (b) 3
   (c) 1 (d) 4

2. 2's complement of binary number 0101 is ————.
   (a) 1111 (b) 1011
   (c) 1101 (d) 1110

3. EX-OR (XOR) Logic gates can be constructed from what other logic gates?

(a) OR gates only

(b) AND gates only

(c) AND gates OR gates and NOR gates

(d) None

4. A Karnaugh map, two adjacent 1's are called ————————.

(a) Octet (b) Quad

(c) Pair (d) None

5. In a combinational circuit, the output at any time depends only on the ———————— at that time.

(a) Input voltage (b) Input values

(c) Clock pulse (d) None

6. When both Input's of JK flip flop cycle, the output will ————————.

(a) Voltage (b) Clock pulse

(c) Change (d) Not change

7. The time required for gate or inverts to change its state called

(a) Rise time (b) Decay time

(c) Propagation time (d) None

8. What is the disadvantage of the ripple carry adder?

(a) The Interconnection are more complex

(b) More stages are required to full adder

(c) Above two are mentioned

(d) It is slow due to propagation time

9. How many clock pulses will be required to completely load serially a 5 bit shift register?

(a) 2 (b) 4

(c) 3 (d) 5

10. Registers capable of shifting in one direction is _____.

(a) Universal shift register

(b) Unidirectional shift registers

(c) Unipolar

(d) Unique shift register

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Perform the operations in binary.

(i) 10101 + 11011

(ii) 11001 – 10011

(iii) 101×11.

Or

(b) How characters are represented in ASCII code? Give examples.

12. (a) Draw the logic symbols and Truth tables for AND, OR and NAND gates.

Or

(b) Using map method for simplify three variable.

$$(m_1 + m_2 + m_3 + m_4 + m_5)$$

13. (a) How can you add two binary values with Binary adder?

Or

(b) With necessary diagram explain D flip flop. What is its advantages?

14. (a) Discuss in detail about parallel-in, parallel-out shift register.

Or

(b) Compare STATIC RAM and DYNAMIC RAM.

15. (a) Explain various types of Micro Instructions.

Or

(b) Discuss main memory management.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Briefly explain the number conversion from one system to another system with examples.

Or

(b) Perform the following operations :

(i) $(324.987)_{10} = ?_8$

(ii) $(257)_8 = ?_{10}$

(iii) $(34.562)_8 = ?_{12}$.

17. (a) Derive the sum of products and product of sums expressions for XOR function from the truth table.

Or

(b) Illustrate the decimal adder with neat diagram.

18. (a) Draw and explain the operation of synchronous counters.

Or

(b) Discuss the functionality of memory unit with its hierarchy levels.

19. (a) Draw the four bit binary asynchronous counter and explain its operation.

Or

(b) Describe the error detection and correction codes.

20. (a) Write about Memory Reference Instruction.

Or

(b) Draw and explain the operation of I/O processor.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20534 E **Sub. Code : CAIT 31/ CACT 31**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Information Technology/Computer Science and I.T. – Allied

DATA STRUCTURES

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A data structure D is a triplet D=(D, F, A), where A is _____

(a) Set of data object (b) Set of functions

(c) Set of rules (d) Set of storage

2. A sparse matrix is a _____ array.

(a) 1-D (b) 2-D

(c) 3-D (d) none

3. A _____ contains homogeneous data elements.

(a) linked list (b) array

(c) stack (d) all of the above

4. Which of the following is application of linked list?

(a) sparse matrix manipulation

(b) polynomial representation

(c) dynamic storage management

(d) all of these

5. Which of the following languages have dynamic memory management mechanism?

(a) C (b) FORTRAN

(c) COBOL (d) BASIC

6. The empty stack can be checked by the condition

(a) top < 1 (b) top < u

(c) top == 0 (d) size > 1

7. In hashing, there is a _____ correspondence between a key value and an index 7 in the hash.

(a) one-to-one (b) one-to-many

(c) many-to-one (d) many-to-many

8. The maximum number of nodes that is possible in a path starting from the root to a leaf note is called the _____ of the tree.

(a) level (b) height

(c) degree (d) sibling

9. The number of comparisons of a straight insertion sort in which the input list is sorted in reverse order is _____

(a) $n-1$ (b) $n(n-1)/2$

(c) $n(n+1)/2$ (d) n

10. The principle of _____ strategy is to solve a large problem by solving the small instances of the problem.

(a) dynamic programming

(b) greedy approach

(c) divide and conquer

(d) sorting

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Manipulate 2-dimensional arrays.

Or

(b) Explain 3-D arrays.

12. (a) Enlighten linked list dynamic storage management.

Or

(b) Discuss the structure of circular doubly linked list.

13. (a) Implement recursion using stacks.

Or

(b) Define queue with its array representation.

14. (a) Illustrate closed with representation of a binary tree.

Or

(b) Organise the linked list representation of a binary tree.

15. (a) Explain straight selection sort with its algorithm.

Or

(b) Present linked list approach of linear search.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Illustrate the array operations sorting and searching with their algorithms.

Or

(b) How do you represent sparse matrices using 2-dimensional arrays?

17. (a) Analyze linkeed list memory representation for fixed storage block.

Or

(b) Elaborate on circular linked list.

18. (a) Illustrate stack operations with push and pop operations.

Or

(b) Demonstrate enqueue and dequeue operations with their algorithms.

19. (a) Present elaborate discussion on any three hashing functions.

Or

(b) Summarize the four operations on binary tree. Explain insertion operation with its algorithm.

20. (a) Describe the straight insertion sort technique.

Or

(b) Elaborately on shell sort algorithm.

———————

(8 pages)

Reg. No. : .....

Code No. : 20535 E **Sub. Code : CAIT 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fourth Semester

Information Technology – Allied

NUMERICAL METHODS AND OPERATIONS RESEARCH

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The bisection method is also known as the _____.
   (a) Quaternary (b) Hex-region
   (c) Bolzano (d) Tri-region

2. In Regula Falsi method, the first approximation is given by _____.
   (a) $\frac{a\,f(b)-b\,f(a)}{f(b)-f(a)}$ (b) $\frac{f(a)-f(b)}{f(a)}$
   (c) $f(b)-f(a)$ (d) $\frac{f(a)-f(b)}{f(b)}$

3. Gauss Elimination methods are _____.

(a) Direct (b) Indirect

(c) Iterative (d) Interpolation

4. The condition for convergence of Gauss-Seidal method is

(a) $|a_{ij}| \leq \sum_{j=1}^{n} |aij|$ (b) $|a_{ij}| \geq \sum_{j=1}^{n} |aij|$

(c) $|a_{ij}| \equiv \sum_{j=1}^{n} |aij|$ (d) $|a_{ij}| \leq \sum_{j=1}^{n} |bij|$

5. The Trapezoidal rule for $\int_{x0}^{x4} y dx$ is

(a) $\frac{h}{2}\{y_0 + 2(y_1 + y_2 + y_3) + y_4\}$

(b) $\frac{h}{3}\{y_0 + 2(y_1 + y_2 + y_3) + y_4\}$

(c) $\frac{h}{2}\{y_0 + 2y_1 + 4(y_2 + y_3) + y_4\}$

(d) $\frac{h}{2}\{y_0 + y_1 + y_2 + y_3 + y_4\}$

6. The degree of $y(x)$ in Simpson's $(3/8)^{th}$ is _____.

(a) 1 (b) 2

(c) 3 (d) 6

7. The application of assignment problems is to obtain _____.

(a) only minimum cost

(b) only maximum profit

(c) minimum cost or maximum profit

(d) assign the jobs

8. The Hungarian method used for finding the solution of the assignment problem is also called _____.

(a) reduced matrix method

(b) matrix minima method

(c) modi method

(d) simplex method

9. In a transportation problem, the method of penalties is called _____ method.

(a) Least cost

(b) South east corner

(c) Vogel's approximation

(d) North west corner

10. When the total of allocations of a transportation problem satisfy the rim condition (m+n–1) the solution is called _____ solution.

(a) degenerate (b) infeasible

(c) unbounded (d) non-degenerate

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Find the real root of the equation $x^3 - 3x + 1 = 0$ lying between 1 and 2 correct to 3 places of decimals by using Bisection Method.

Or

(b) Using Newton–Raphson Method, find correct to four decimal places, the root between 0 and 1 of the equation $x^3 - 6x + 4 = 0$.

12. (a) Solve the following equations by Gauss Elimination method $x + y = 2$, $2x + 3y = 5$.

Or

(b) Explain about Gauss–Seidal Iteration Method.

13. (a) Evaluate $\int_0^1 \frac{dx}{1+x^2}$ using Trapezoidal rule with $h = 0.2$. Hence determine the value of π.

Or

(b) Apply Simpson's rule to evaluate $\int_0^2 \frac{dx}{1+x^2}$ to two decimal places, by dividing the range into 4 equal parts.

14. (a) Write about the Mathematically Formulation of Assignment Problem.

Or

(b) State and discuss about Hungarian Method.

15. (a) Write about the types of transportation problem.

Or

(b) Obtain initial feasible solution for the following Transportation table using North West Corner rule.

Source	Destination			Supply
	A	B	C	
1	2	7	4	5
2	3	3	1	8
3	5	4	7	7
4	1	6	2	14
Demand	7	9	18	

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Find the real root lying between 1 and 2 of the equation $x^3 - 3x + 1 = 0$ upto 3 places of decimals by using Regula–Falsi Method.

Or

(b) Use the method of iteration to solve the equations $x^3 + x^2 - 1 = 0$.

17. (a) Find the inverse of the matrix $A = \begin{pmatrix} 2 & 1 & 1 \\ 3 & 2 & 3 \\ 1 & 4 & 9 \end{pmatrix}$ using Gaussian Method.

Or

(b) Solve the following system of equations using Gauss Seidel iteration method.

$10x + 2y + z = 9$

$x + 10y - z = -22$

$-2x + 3y + 10z = 22$

18. (a) Use the trapezoidal rule with $h = \frac{1}{2}$ and $h = \frac{1}{4}$ to evaluate $\int_0^1 f(x)\,dx$ using the table below:

x	0.000	0.250	0.500	0.750	1.000
$f(x)$	0.79788	0.77334	0.70413	0.60227	0.48394

Or

(b) Evaluate $\int_0^{\frac{\pi}{2}} \sin x dx$ by Simpson's $\frac{1}{3}$ rule dividing the range into six equal parts.

19. (a) A department head has four subordinates, and four tasks to be performed. The subordinates differ in efficiency and the tasks differ in intrinsic difficulty. His estimate of the times each man would take to perform each task is given in the effectiveness matrix below. How should the tasks be allocated, one to a man, so as to minimize the total man hours?

Subordinates

		I	II	III	IV
	A	8	26	17	11
Takes	B	13	28	4	26
	C	38	19	18	15
	D	19	26	24	10

Or

(b) Find the optimal assignment for the assignment problem with the following cost matrix.

	I	II	III	IV
A	5	3	1	8
B	7	9	2	6
C	6	4	5	7
D	5	7	7	6

20. (a) Find the basic feasible solution of the following transportation problem using Vogels Approximation Method.

Warehouse / Factory	W1	W2	W3	W4	Factory Capacity
F1	19	30	50	10	7
F2	70	30	40	60	9
F3	40	8	70	20	18
Warehouse Requirement	5	8	7	14	34 (Total)

Or

(b) A company has factories at A, B and C which supply warehouses at D, E, F and G. The monthly factory capacities are 160, 150 and 190 units, respectively. Monthly warehouse requirements are 80, 90, 110 and 160, respectively. Unit shipping costs (in rupees) are as follows:

		To			
		D	E	F	G
	A	42	48	38	37
From	B	40	49	52	51
	C	39	38	40	43

Determine the optimum distribution for this company to minimize shipping costs.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20536 E **Sub. Code : CNIT 31/ CNCT 31**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Third Semester

Information Technology/Computer Science and I.T. – Non Major Elective

SOFTWARE FUNDAMENTALS

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A _____ is an easy way of representing an algorithm in tabular form.

   (a) program (b) algorithm

   (c) decision table (d) decision box

2. An _____ is defined as the finite sequence of explicit instructions, that when provided with a set of input values produces and output and then terminates.

(a) algorithm (b) decision

(c) flowchart (d) document

3. _____ refers to all written materials that help in explaining the use and the maintenance software system or program.

(a) Program (b) Documentation

(c) Software (d) Notes

4. A _____ is an abstraction that captures the common structure and behaviour of a set of objects.

(a) class (b) object

(c) variable (d) program

5. The first computer program was made by _____.

(a) WinnCerf

(b) Charles Babbage

(c) Bill gates

(d) Lady Lovelace Ada Augusta

6. Which of the following is high level language?

(a) FORTRAN (b) LISP

(c) Prolog (d) All the mentioned

7. Which of the following is an Operating System?

(a) MS EXCEL (b) C++

(c) Unix (d) All the mentioned

8. A _____ is an ordered list of instruction that when executed causes the computer to behave in a predominated manner.

(a) Hardware (b) Software

(c) Program (d) Driver

9. _____ is a network of networks, which allows the users to share information.

(a) TCP/IP (b) Internet

(c) Domain (d) (a) or (b)

10. URL is _____

(a) A computer software program

(b) A type of web server

(c) The address of a document or page on the world wide web.

(d) A an acronym for unlimited resources for learning.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the properties of algorithm with an example.

Or

(b) Enumerate the four quadrants of decision table and also list down the steps to develop a decision table.

12. (a) Elucidate on black box testing with advantages and disadvantages.

Or

(b) Examine the categories of documentation.

13. (a) Present the Advantage and disadvantages of high level languages.

Or

(b) List and explain any five features of good programming language.

14. (a) Give elaborate notes on system software.

Or

(b) Propose and explain any five application software packages.

15. (a) Describe the following internet applications

(i) Newsgroups

(ii) Video conferencing

Or

(b) Discuss the types of computer viruses.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) List and explain flowchart symbols with suitable examples.

Or

(b) List down and explain the phases of program development cycle with pictorial representation.

17. (a) Organise detailed notes on object oriented programming paradigm.

Or

(b) Intricate on :

(i) White box testing with its advantages and disadvantages.

(ii) Structured programming.

18. (a) Write detailed notes on fourth generation languages.

Or

(b) Enumerate and explain nay five high level languages.

19. (a) Describe software terminology.

Or

(b) What are application of softwares? Explain any five application software packages.

20. (a) Explain the following internet terms:

(i) Uniform Resource Locator

(ii) Hypertext

Or

(b) Elaborately explain about e-mail.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20537 E **Sub. Code : CNIT 41/ CNCT 41**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Fourth Semester

Information Technology/Computer Science and Information Technology — Non Major Elective

FUNDAMENTALS OF INTERNET

(For those who joined in July 2021-2022 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. PSTN stands for ————————

(a) Public switched telephone network

(b) Personal switched telephone network

(c) Personal switched telephone node

(d) Public switched telephone node

2. ———————— is a set of rules that enable the exchange of information between computers.

(a) protocols (b) bandwidth

(c) interface (d) connector

3. What is a '.com' in a web address mean ————?

(a) common (b) commercial

(c) communication (d) command

4. The first part of your email address before the '@' is called your :

(a) www (b) domain name

(c) username (d) password

5. What is defined as the collection of webpage?

(a) collection (b) website

(c) view (d) program

6. Website addresses are allotted by

(a) InterNIC (b) NIC

(c) DEC (d) ISO

7. E-Commerce means ————————

(a) Electronic Commerce

(b) Electronic Common

(c) Easy Commerce

(d) Email commerce

8. Which software is used develop websites?

(a) Paint (b) Word

(c) Excel (d) Adobe Dreamweaver

9. WAP stands for ————————

(a) Wireless Application Protocol

(b) Wired Application Protocol

(c) Wireless Application Procedure

(d) Wired Application Procedure

10. The ———————— attaches itself to the e-mail or files.

(a) Tag (b) Bug

(c) Worm (d) Virus

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the advantages of Internet?

Or

(b) Write short notes on history of the Internet.

12. (a) Explain advantages of e-mails.

Or

(b) Describe any two search engines.

13. (a) Write about web development tools.

Or

(b) Discuss about front page and Dreamweaver.

14. (a) Explain advantages of E-Commerce.

Or

(b) Write short notes on future of e-commerce.

15. (a) Explain about Information Technology Act.

Or

(b) Explain Internet Threats and it types.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain Internet Services in detail.

Or

(b) Discuss about TCP/IP.

17. (a) Discuss about types websites.

Or

(b) Explain the types of Internet accounts.

18. (a) Discuss the structure of the website with an example.

Or

(b) Explain visitor analysis and statistics.

19. (a) Discuss about types of business in the internet.

Or

(b) Describe various issues of E-Commerce and M-Commerce.

20. (a) Discuss the following :

(i) Hacking

(ii) Spamming

(iii) Spoofing

(iv) Phishing

Or

(b) What is Blogs in Internet? What are the uses of Blogs?

———————

(6 pages) **Reg. No. :** .....

Code No. : 20540 E **Sub. Code : CEIT 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fifth Semester

Information Technology – Major Elective

CLOUD COMPUTING

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer.

1. _____ delivers IT enabled services via internet that are built for the end user to be in control.

   (a) Mobile computing

   (b) Cloud computing

   (c) Grid computing

   (d) Green Computing

2. For customers, ———————— requires no upfront investment in servers or software licensing.

(a) SaaS (b) PaaS

(c) IaaS (d) DaaS

3. The ———————— can scan your email messages for dates and times and, with a few clicks of your mouse, create events based on the content of your Gmail messages.

(a) Yahoo Calendar (b) Windows Live

(c) Google Calendar (d) Apple MobileMe

4. ———————— is a web search engine for local events.

(a) Events (b) Zvents

(c) Hvents (d) Mvents

5. ———————— an online marketplace of add-on software for Salesforce.com, developed by independent companies.

(a) Force.com, (b) Salesforce.com

(c) Service.com (d) App Exchange

6. ———————— management is the act of storing information about friends, family, and business colleagues for easy retrieval at a later date.

(a) Marketing (b) Sales

(c) Contact (d) Business

7. ———————— is a software program that is installed on your computer's hard disk.

(a) Microsoft Word (b) Microsoft VC++C

(c) Microsoft PDF (d) Microsoft VB.NET

8. The ———————— online spreadsheet offers basic spreadsheet features paired with advanced collaboration tools.

(a) Google (b) Edit Grid

(c) eXpresso (d) Glide Crunch

9. The ———————— Simple Storage Service provides unlimited online storage and also access your stored data via a simple web interface.

(a) Egnyte (b) Amazon S3

(c) Elephant Drive (d) Flipkart Drive

10. ———————— is a business ready cloud hosting platform.

(a) steek R (b) Nirvanix

(c) my Data Bus (d) Mosso

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain about benefits of cloud computing.

Or

(b) Discuss about cloud computing.

12. (a) Explain about cloud computing for community.

Or

(b) Discuss about presenting on road in cloud computing environment.

13. (a) Illustrate about exploring web based word processors.

Or

(b) How web-based spread sheets work? Explain.

14. (a) Describe about evaluating web conference tools.

Or

(b) Explain about collaborating via blogs.

15. (a) Explain about cloud storage.

Or

(b) Discuss about exploring online book making services.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about working of cloud computing.

Or

(b) Explain about discovering cloud services.

17. (a) Elaborate about collaborating on schedules.

Or

(b) Elucidate about managing schedules.

18. (a) Discuss the exploring online scheduling and planning.

Or

(b) Summarize the contact management and CRM.

19. (a) Explain briefly about evaluating web mail services.

Or

(b) Elucidate about evaluating online groupware.

20. (a) Discuss about evaluating online file storage.

Or

(b) Explain about exploring photo sharing communites.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20541 E **Sub. Code : CEIT 54**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Fifth Semester

Information Technology – Major Elective

DATA COMMUNICATIONS AND NETWORKING

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— is a set of rules that govern data communication.

(a) Syntax (b) Semantics

(c) protocol (d) Transmission

2. Name the transmission mode, in which the communication is unidirectional, Only one of the two devices on a link can transmit.

(a) Duplex (b) Full duplex

(c) Half duplex (d) Simplex

3. In ———————— transmission, bits are transmitted simultaneously, each across its own wire.

(a) asynchronous serial

(b) synchronous serial

(c) parallel

(d) (a) and (b)

4. A ———————— is a device that is a source of or destination for binary digital data.

(a) data terminal equipment

(b) data transmission equipment

(c) digital terminal encoder

(d) digital transmission equipment

5. The sharing of a medium and its path by two or more devices is called ————————

(a) modulation (b) encoding

(c) line discipline (d) multiplexing

6. Which multiplexing technique transmits analog signals?

(a) FDM and WDM (b) TOM

(c) WDM (d) FDM

7. Which type of switching uses the entire capacity of a dedicated link?

(a) circuit switching

(b) datagram packet switching

(c) virtual circuit packet switching

(d) message switching

8. The ———————— is a device that connects n inputs torn outputs.

(a) crosspoint (b) crossbar

(c) modem (d) RAM

9. The term ———————— means that two or more bits in the data unit have changed from 1 to 0 or from 0 to 1.

(a) VRC (b) CRC

(c) burst error (d) single-bit error

10. In VRC technique, a redundant bit, called as ————————

(a) Even bit (b) Odd bit

(c) Parity bit (d) Null

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Identify the components of data communication systems.

Or

(b) Summarize the functions of Physical layer.

12. (a) List the advantages and disadvantages of Parallel transmission.

Or

(b) Examine the features of Coaxial cable.

13. (a) Comment on multiplexer and demultiplexer.

Or

(b) How does FDM combine multiple signals into one? Explain.

14. (a) Describe the message switching mechanism.

Or

(b) Illustrate the categories of services provided by ISDN.

15. (a) How does a single-bit error differ from a burst error?

Or

(b) Write note on VRC.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the functioning of LAN and MAN.

Or

(b) Illustrate the responsibilities of Application layer.

17. (a) Discuss the different methods of Serial transmission.

Or

(b) Narrate the types of propagations in data communication.

18. (a) Elaborate on the Bit stuffing technique.

Or

(b) Describe Asynchronous TDM with an example.

19. (a) Compare Circuit-switched connection versus Virtual-Circuit connection.

Or

(b) Explain the specifications of ISDN Physical layer.

20. (a) Enumerate the Check sum error detection method with an example.

Or

(b) Discuss the Sliding window ARQ.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20678 E **Sub. Code : EMIT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Information Technology – Core

PROGRAMMING IN C

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The address of the next instruction to be executed is maintained in a register called the _____.

   (a) machine code

   (b) program

   (c) data

   (d) program counter

2. Which one of the following functions used to write a character one at a time to the terminal?

(a) putchar (b) putc

(c) putch (d) put

3. Which one of the following loop is called as entry-controlled loop?

(a) For (b) while

(c) do-while (d) for-each

4. Which function is used to determine whether one string is subset of another?

(a) Strcat (b) strcmp

(c) strcpy (d) strstr

5. A function declaration consists of _____.

(a) Return type (b) function name

(c) parameter list (d) all of the above

6. Arguments received by a function in C language are called _____ arguments.

(a) Definite arguments

(b) Formal arguments

(c) Actual arguments

(d) Ideal arguments

7. Which one of the following function can handle only one member at a time?

(a) union (b) structure

(c) array (d) none of these

8. What will be the size of the following structure?

```
Struct demo{
int a;
char b;
float c;
}
```

(a) 12 (b) 8

(c) 10 (d) 9

9. Find the output of the following program?

```
Void main()
{
char*msg=hai";
printf(msg);
}
```

(a) h (b) ha

(c) hai (d) Compiling Error

10. Fseek(filepointer, m, 1)

This function moves the file pointer _____ of the file.

(a) to the beginning

(b) to the end

(c) forward by m bytes

(d) backward by m bytes

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss in detail about reliability in language evaluation criteria.

Or

(b) Discuss in detail about arithmetic operators with example.

12. (a) Explain in detail about do-while statement with an example program.

Or

(b) Explain in detail about for statement with an example program.

13. (a) Elucidate user defined function with an example program.

Or

(b) Elucidate nesting of functions with an example.

14. (a) Paraphrase structure initialization and rule for initializing structure with an example.

Or

(b) Paraphrase union with an example.

15. (a) How will you access a variable through its pointer? Explain with example.

Or

(b) Explain about opening and closing a file with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss in detail about influences on language design.

Or

(b) Discuss in detail about relational operators and bitwise operators with an example.

17. (a) Describe in detail about else if ladder with an example program.

Or

(b) Describe in detail about string handling function in C.

18. (a) Illustrate any two categories of function with an example.

Or

(b) Illustrate recursion with an example program.

19. (a) Demonstrate arrays within structures with an example program.

Or

(b) Write a C program to calculate the subject wise and student wise totals and store them as a part of the structure.

20. (a) Describe array of pointers with example.

Or

(b) Describe input and output operations on files with example.

———————

(7 pages) **Reg. No. :** .....

Code No. : 20679 E **Sub. Code : EEIT 11/ EECT 11**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

First Semester

Information Technology/Computer Science and I.T.

Elective — NUMERICAL METHODS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The method of least squares finds the best fit line that ———————— the error between observed and estimated points on the line.

   (a) Maximize

   (b) Minimize

   (c) Reduces to zero

   (d) Approaches to infinity

2. The normal equation for fitting of a straight line $y = a + bx$ is $\sum y$ = ————————.

(a) $Na + b\sum x$ (b) $N^{2a} + b\sum x^2$

(c) $Na + b\sum x^2$ (d) $A + b\sum x$

3. Rate of convergence of the Newton-Raphson method is generally ————————.

(a) Linear (b) Quadratic

(c) Super-linear (d) Cubic

4. The Newton-Raphson method of finding roots of nonlinear equations falls under the category of which of the following methods?

(a) Bracketing (b) Open

(c) Random (d) Graphical

5. The aim of elimination steps in Gauss elimination method is to reduce the coefficient matrix to ————————.

(a) diagonal (b) identity

(c) lower triangular (d) upper triangular

6. In Gauss Jordan method which of the following transformations are allowed?

   (a) Diagonal transformation

   (b) Column transformation

   (c) Row transformation

   (d) Square transformation

7. The order of fitting polynomial of Simpson's 3/8 rule is ————————.

   (a) one (b) two

   (c) three (d) none

8. Newton Forward difference formula can be used ————————.

   (a) only for equally spaced intervals

   (b) only for unequally spaced intervals

   (c) for both equally and unequally spaced intervals

   (d) for unequally intervals

9. The first two steps of the fourth-order Runge-Kutta method use ————————.

   (a) Euler methods

   (b) Forward Euler method

   (c) Backward Euler method

   (d) Explicit Euler method

10. To insure greater accuracy, we must first improve the accuracy of the starting values and then sub-divide the intervals by using ———— predicator.

(a) Euler (b) Milner

(c) RK (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) If P is the pull required to lift a load W by means of a pulley block, find a linear law of the form $P = mW + c$ connecting P and W, using the following data :

P	12	15	21	25
W	50	70	100	120

Where P and W are taken in kg weight. Compute P when $W = 150$ kg.

Or

(b) Write a working procedure of least squares method.

12. (a) Give short note on Bisection method.

Or

(b) Find the positive root of $x^4 - x = 10$ correct to three decimal places, using the Newton-Raphson method.

13. (a) Apply Gauss elimination method to solve the equations :

$x + 4y - z = -5$;

$x + y - 6z = -12$;

$3x - y - z = 4$.

Or

(b) Apply the Gauss-Jordan method to solve the equations $x + y + z = 9$; $2x - 3y + 4z = 13$; $3x + 4y + 5z = 40$.

14. (a) What is backward substitution? Explain.

Or

(b) Use the Trapezoidal rule to estimate the integral $\int_0^2 e^{x^2} dx$ taking the number 10 intervals.

15. (a) Apply the Runge-Kutta fourth order method to find an approximate value of y when $x = 0.2$ given that $dy/dx = x + y$ and $y = 1$ when $x = 0$.

Or

(b) Find an approximate value of y for $x = x_0 + nh$ by Milne's method, where $dy/dx = f(x, y)$ and $y = y_0$ and $x = x_0$.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Find the least squares fit of the form $y = a_0 + a_1 x^2$ to the following data :

X	–1	0	1	2
Y	2	5	3	0

Or

(b) Explain different types of fitting a curve.

17. (a) Find a root of the equations $x^3 - x - 1 = 0$, using the bisection method correct to three decimal places.

Or

(b) Find a real root of the equation $x^3 - 2x - 5 = 0$ by the method of false position correct to three decimal places.

18. (a) Explain the Solving methods of Jacobi's iteration method.

Or

(b) Solve the equations :

$27x + 6y - z = 85$;
$x + y + 54z = 110$;
$6x + 15y + 2z = 72$

by the Gauss-Seidel method.

19. (a) Find the value of $\cos(1.74)$ from the following table :

X	1.7	1.74	1.78	1.82	1.86
cos$x$	0.9916	0.9857	0.9781	0.9691	0.9584

Or

(b) Compute the value of $\int_{0.2}^{1.4}(\sin x - \log x + e^x)dx$ using Simpson's 3/8th rule.

20. (a) Using the Runge-Kutta method of fourth order, solve $dy/dx = (y^2 - x^2)/(y^2 + x^2)$ with $y(0) = 1$ at $x = 0.2$ and $x = 0.4$.

Or

(b) Apply Milne's method, to find a solution of the differential equation $y' = x - y^2$ in the range $0 \le x \le 1$ for the boundary condition $y = 0$ at $x = 0$.

(7 pages)

Reg. No. : .....

Code No. : 20680 E **Sub. Code : EEIT 12/ EECT 12**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

First Semester

Information Technology / Computer Science and I.T.

Elective — DISCRETE MATHEMATICS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. If x is a set and the set contains an integer which is neither positive nor negative then the set x is _____.

   (a) Set is Empty

   (b) Set is Non-empty

   (c) Set is Finite

   (d) Set is both Non-empty and Finite

2. Which option contains two equal sets?

(a) $X = \{5, 6\}$ and $Y = \{6\}$

(b) $X = \{5, 6, 8, 9\}$ and $Y = \{6, 8, 5, 9\}$

(c) $X = \{5, 6, 9\}$ and $Y = \{5, 6\}$

(d) $X = \{5, 6\}$ and $Y = \{5, 6, 3\}$

3. Let $A = \{1, 2, 3\}$, $B = \{a, b, c\}$ and $f = \{(1, a), (2, b), (3, c)\}$ is a function from A to B. The domain of the function f is ————————.

(a) B (b) A

(c) A, B (d) a, b, c

4. Let $A = \{a, b, c\}$, $B = \{1, 2, 3\}$ and $f = \{(a, 1), (b, 3), (c, 2)\}$. Find f^{-1}.

(a) $\{(a, 1), (b, 3), (c, 2)\}$ (b) $\{(1, a), (2, c), (b, 3)\}$

(c) $\{(1, a), (2, c), (3, b)\}$ (d) $\{(1a), (2c), (3b)\}$

5. Find out the statement from the following

(a) 7 + 2 = 9

(b) Where are you going?

(c) $X + 2 = 7$

(d) Go to bed

6. The biconditional statement 'p if and only if q' is denoted by ————————.

(a) $p \rightarrow q$ (b) $q \leftrightarrow p$

(c) $p \leftrightarrow q$ (d) $p \leftarrow q$

7. The sum of principal diagonal elements of a square matrix is known as ———————— of the matrix.

(a) row matrix (b) diagonal

(c) determinant (d) trace

8. A square matrix A is said to be skew-symmetric if

(a) $A^T = -A$ (b) $A = -A^T$

(c) $A^T = A$ (d) (a) or (b)

9. The path that begins and ends at the same vertex is called ————————.

(a) Walk (b) Circuit

(c) Bridge (d) None of the above

10. An ———————— graph consists of set of vertices and a set of edges such that each edge is associated with an unordered pair of vertices.

(a) Directed (b) Undirected

(c) Uni-directed (d) Bidirected

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Illustrate equivalence relation and antisymmetric relation with example.

Or

(b) Find the Symmetric closure of the relation $R = \{(1, 1), (1, 2), (2, 2), (2, 3), (3, 1), (3, 2)\}$ defined on the set $A = \{1, 2, 3\}$.

12. (a) Given that f_1 and f_2 are functions from R to R in which $f_1(x) = x$ and $f_2(x) = \left(\frac{1}{x}\right) - x$.

Determine the function $f_1 + f_2$ and $f_1 f_2$.

Or

(b) Explain identity function and constant function.

13. (a) Construct the truth table for $\sim (p \vee q) \vee (\sim p \wedge \sim q)$.

Or

(b) Explain the following normal forms :

(i) Conjunctive

(ii) Disjunctive.

14. (a) Define conjugate and complex matrices with examples.

Or

(b) Find the determinant of matrix $\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$.

15. (a) Define regular graph and Bipartite graph with examples.

Or

(b) Prove that the number of odd degree vertices in a graph is always even.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Let $A = \{1, 2, 9\}$ and $B = \{1, 3, 7\}$

Find the elements of each relation R stated below. Also find the domain and range of R if

(i) relation R is 'equal to' then

(ii) relation R is 'less than'

(iii) relation R is 'greater than'.

Or

(b) Let $A = \{1, 2, 3, 4, 5\}$ and

$R = \{(1, 1), (1, 2), (2, 3), (3, 5), (3, 4), (4, 5)\}$.

Determine (i) R^2 (ii) R^∞.

17. (a) Elaborate on one-to-one and on-to function with example.

Or

(b) Let $X = \{a, b, c\}$. Define $f : X \to X$ such that $f = \{(a, b), (b, a), (c, c)\}$. Determine (i) f^1 (ii) f^2 (iii) f^3 (iv) f^4.

18. (a) Verify that the proposition $p \vee \sim (p \wedge q)$ is a tautology.

Or

(b) Show that
$p \to (q \to r) \Leftrightarrow p \to (\sim q \vee r) \Leftrightarrow (\sim p \wedge q) \vee r$.

19. (a) Show that the matrix $A = \begin{pmatrix} 2 & 3 \\ 1 & 2 \end{pmatrix}$ satisfies the equation $A^2 - 4A + I = 0$.

Or

(b) Validate that the matrix $A = \begin{pmatrix} -5 & -8 & 0 \\ 3 & 5 & 0 \\ 1 & 2 & -1 \end{pmatrix}$ is involutory.

20. (a) Enumerate and explain any four operations on graphs.

Or

(b) Draw a diagram for the graph $G(V, E)$, $V = \{v_1, v_2, v_3, v_4, v_5, v_6, v_7\}$ and $E = \{(v_1, v_2), (v_1, v_3), (v_1, v_4), (v_2, v_4), (v_2, v_5), (v_3, v_4), (v_4, v_5), (v_4, v_6), (v_5, v_6), (v_6, v_7)\}$. And also find the degree of all the vertices.

(6 pages) **Reg. No. :** .....

Code No. : 20681 E **Sub. Code : ESIT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Information Technology–Skill Enhancement Course

INTRODUCTION TO HTML

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Concept of information retrieval is called _____

(a) hyper text

(b) cyber text

(c) text

(d) message

2. The web was essentially invented by ——————

(a) Dr. Lee John Von

(b) Dr. Tim Berners Lee

(c) Dr. Smith

(d) Dr. Sharon

3. A _____ is a collection of web pages.

(a) file (b) record

(c) database (d) web site

4. The first tag in every HTML document is _____

(a) <HEAD></HEAD>

(b) <HTML></HTML>

(c) <B> </B>

(d) <TITLE></TITLE>

5. HTML has —————— level of headings.

(a) one (b) two

(c) three (d) six

6. Numbered list or the ordered list can be created by giving the —————— tags.

(a) <UL></UL> (b) <OL></OL>

(c) <LI></LI> (d) <I></I>

7. The ———— element is used to create an unordered list.

(a) h1 (b) h6

(c) ul (d) hr

8. The ———— tag is used to insert line break.

(a)
 (b) <hr>

(c) <p> (d)

9. Which tag is used to set the table heading?

(a) <TD> (b) <TR>

(c) <TH> (d) <HEAD>

10. Which will display more than one screen at a time to the user in a wepage?

(a) Frames (b) Lists

(c) Menus (d) Table

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give a brief note on Internet.

Or

(b) Discuss the following (i) Web browser (ii) Web pages (iii) WWW

12. (a) Describe the basic structure of HTML.

Or

(b) What are the different levels of heading tags and paragraph in HTML? Explain.

13. (a) What is list? Explain <ol> with all attributes and example.

Or

(b) Discuss <ul> with all attributes and example.

14. (a) Write an html program to create your class time table using table tags.

Or

(b) Explain the following: (i) Rowspan (ii) Colspan (iii) Cellpadding

15. (a) Write an html program to implement student registration form using Input and Textarea tags.

Or

(b) Write HTML code to include frames in a webpage.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the basic understanding html: <b>, <i>, <big><heading>, <p>,
 <hr> and tags.

Or

(b) Explain the html formatting elements with example code.

17. (a) Discuss the formatting text and tags with example.

Or

(b) What is list tag in html? Explain the types of html tag with example.

18. (a) Write a HTML program to print a paragraph with different font and color.

Or

(b) Create web pages using ordered and unordered lists within a WebPages.

19. (a) Write an HTML code to create the following table.

Emp Pay Roll

EmpNo	Name	Salary
101	ABIN	15,000
102	SINI	20,000
103	ANU	25,000

Or

(b) Create a webpage to insert ordered and unordered lists within pages.

20. (a) Explain Nesting of Frameset with an example.

Or

(b) Differentiate <Frame>, <Frameset> and <No Frame> tag with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20683 E **Sub. Code : EFIT 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Information Technology – Foundation Course

FUNDAMENTALS OF COMPUTERS

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is brain of computer ————————?

   (a) Central Processing Unit

   (b) Memory

   (c) ALU

   (d) Control Unit

2. What is smallest unit of information?

(a) A byte (b) A block

(c) A nibble (d) A bit

3. A program is a sequence of ———————— written in programming language.

(a) lines (b) functions

(c) instructions (d) code word

4. Which of the following is designed to control the operations of a computer?

(a) Application software

(b) System software

(c) Utility software

(d) User software

5. Last step in process of problem solving is to ————————.

(a) design a solution

(b) practicing the solution

(c) define a problem

(d) organizes the data

6. Which of the following is easier to be transformed into a computer program?

(a) algorithm (b) flowchart

(c) pseudo code (d) none of these

7. What is the use of size of ( ) operator?

(a) To get the size of data types or variables in bytes

(b) To get the size of variables only

(c) To get the size of the structure only

(d) None of the above

8. ———————— is a step-by-step procedure, which defines a set of instructions to be executed in certain order to get the desired output.

(a) Code (b) Algorithm

(c) Program (d) Flowchart

9. Functions that are used in the programs and are defined by the programmers are called ————————.

(a) Program Layout

(b) Program Procedure

(c) Built in Function

(d) User Defined Function

10. A global variable is declared ————————.

(a) Outside of the function

(b) Inside of the function

(c) With the function

(d) Anywhere in the program

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Give a brief note on Generation of Computers.

Or

(b) What do you mean by Control Unit? Explain its type.

12. (a) Describe the types of software.

Or

(b) Analyse the concept of OOPs.

13. (a) Enumerate on different types of problems.

Or

(b) What are the difficulties in problem solving? Discuss.

14. (a) Describe the various data types with example.

Or

(b) Give a brief note on Expression and Equations.

15. (a) Write a note on Return values.

Or

(b) Distinguish between Local and Global variables.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Elaborate on

(i) I/O unit

(ii) ALU

(iii) CPU.

Or

(b) Describe the working of storage unit.

17. (a) Discuss the System Architecture with neat diagram.

Or

(b) Write a note on Machine Language and Assembly Language.

18. (a) Demonstrate the various steps in problem solving techniques.

Or

(b) Explain the four strategies of problem solving techniques.

19. (a) Elucidate on Functions and its type.

Or

(b) Elucidate on Operators and its type with example.

20. (a) Explain the various decision statements in problem solving.

Or

(b) Illustrate the entry and exit loops with example program.

———————