

UNIT-I

INTRODUCTION TO COMPUTERS

1. Define Computer?

Computer is a fast operating electronic device, which automatically accepts and store input data, processes them and produces results under the direction of step by step program.

2. Define Data & Information?

Data is the fact or raw material for the information processing.
The processed data is called as Information.

3. Distinguish between Analog & Digital computer.

S. NO	Analog Computer	Digital Computer:
1.	It operates by measuring	It operates by counting
2.	It requires physical analog	It functions on discrete numbers
3.	The output is in the form of graphs	The output is in the form of discrete values
4.	Less accurate	More accurate
5.	Less speed	High speed
6.	Limited memory	More memory

4. Expand ENIAC, ABC, EDVAC, EDSAC and UNIVAC.

ENIAC → Electronic Numerical Integrator and Calculator
 ABC → Atanasoff and Berry Computer
 EDVAC → Electronic Discrete Variable Automatic Calculator
 EDSAC → Electronic Delay Storage Automatic Calculator
 UNIVAC → UNIVersal Automatic Computer

5. State the characteristics of computer.

The characteristics of computer are Speed, Accuracy, Automation, Endurance, Versatility, Storage, Cost reduction, No IQ.

6. How will you classify computer system?

The computer system can be classified on the basis of

- ❖ Hardware design
- ❖ Utility
- ❖ Size and Capacity
- ❖ Mode of use

7. Differentiate between volatile and non- volatile memory.

S. No	Volatile	Non-Volatile
1.	The contents are temporary	The contents are permanent
2.	Cost is very high	Cost is effective
3.	Available in small storage capacity	Available in high storage capacity
4.	Processing speed is high	Processing speed is low
5.	Example: RAM	Example: ROM

8. Give any two tasks which humans perform better than computers.

Humans can think of their own, reason and discover, but the computer can simply compare, calculate and manipulate.

9. Convert the binary number 100110 into its octal equivalent.

$$= \frac{100}{4} \frac{110}{6}$$

The ans is 46_8

10. Convert the binary number $(100111)_2$ to Decimal number.

$$\begin{aligned} &= 1 \times 2^5 + 0 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 \\ &= 1 \times 32 + 0 \times 16 + 0 \times 8 + 1 \times 4 + 1 \times 2 + 1 \times 1 \\ &= 32 + 0 + 0 + 4 + 2 + 1 \\ &= 39_{10} \end{aligned}$$

11. Convert 0.4375 decimal to binary system.

0.4375×2	0.875×2	0.75×2	0.5×2
$\frac{2}{0.8750}$	$\frac{2}{1.750}$	$\frac{2}{1.50}$	$\frac{2}{1.0}$

ANS: 0.0111_2

12. What are the basic operations of a computer?

The basic operations of a computer are Input, Process, Storing, Controlling, and Output.

14. List the four categories of computer hardware.

- ❖ INPUT
- ❖ OUTPUT
- ❖ MEMORY
- ❖ CPU

15. Who is the father of computer and why?

Charless Bebbage is the father of computer, because the parts and working principle of the Analytical engine, which is invented by Charles Bebbage is similar to todays computer.

16. What are the main functions of an ALU?

It performs all the arithmetic and logical operations. Arithmetic operations like addition, subtraction, division, multiplication and logical such as comparisons are performed.

17. What are the types of number system?

There are basically two types of number system available

- ❖ Positional Number System
- ❖ Non- Positional Number System

18. Define Base or Radix?

It is defined as the total number of digits available in the number system.

19. Define Clients & Servers?

Clients:

It is generally a single user PC or work station that provides a highly user-friendly interface to the end user. It runs Client processes, which send service requests to the server.

Server:

It is generally a relatively large computer that manages a shared resource and provides a set of shared user services to the clients. It runs the server process, which services client requests for use of the resource managed by the server. The network may be a single LAN or WAN or an internet of networks.

20. Specify the Electronics components used for different computer generations?

Generation	Electronic Components
I Generation	Vaccum Tubes
II Generation	Transistors
III Generation	Integrated Circuits
IV Generation	Microprocessors
V Generation	Artificial Intelligence

UNIT II

COMPUTER SOFTWARE AND INTERNET

1. Define Computer Software?

Software is a set of programs or collection of programs that is executed by the Computer's CPU to function it in a desired way.

2. What is meant by Installation and Assembling?

Installation –It is the process of loading the software package into the computer.

Assembling – It is the process of mounting different computer peripherals into one, to make the computer to function properly.

3. Define Hardware.

Hardware is the physical components of the computer.

4. What are the types of Software?

1. Application software.
2. System software.

5. Define OS.

An operating system is a set of programs, which are used to control and co-ordinate the computer system.

6. What are the types of Operating System?

- Single user operating system.
- Multi-user operating system.
- Time sharing operating system.
- Virtual storage operating system.
- Real time operating system.
- Multiprocessing operating system.
- Virtual machine operating system.

7. Define Multiprocessing?

Multiprocessing is the process of executing a single job by using multiple CPU's.

8. What are language translators?

The language translators are the programs which come under system software category. They are Compilers, Interpreters and Assembler.

9. What are a Compiler, Assembler and Interpreter?

Compiler: It is a program which is used to convert the high level language program into machine language.

Assembler: It is a program which is used to convert the assembly level language program into machine language.

Interpreter: It is a program; it takes one statement of a high level language program, translates it into machine language instruction and then immediately executes the resulting machine language instruction.

10. What is application software?

An application software is a set of programs, that allows the computer to perform a specific data processing for the user.

11. How can you obtain required software?

- Buying Pre-defined software.
- Buying customized software.
- Developing the software.
- Downloading from the Internet.

12. What are the categories of application software?

- Customized Application Software.
- General Application Software.

13. Define the System.

System is a group of interrelated components working together towards a common goal.

14. Specify the personnel's, who are responsible for system design and implementation.

- System Personnel.
- System Analyst.
- System Designer.
- Programmers.
- Users.

15. What is system development cycle?

System development cycle is the sequence of events considered by the system developers to build the new system or to replace the old one.

16. What is Software Requirement Specification (SRS) document?

The Software Required Specification (SRS) Document is produced at the end of Requirement Analysis stage, which specifies all requirements of the customer.

17. What is meant by Testing?

Testing is the process of executing the proposed software with sample or test data and put into regular use.

18. What is Design?

The Design is the process of specifying the detailed operation of the system.

19. What is meant by Coding?

Coding is the process of writing program in a programming language.

20. What is Implementation & Maintenance?

Implementation is the process of putting the system into regular use.

Maintenance is the process of enhancing the system after installation.

21. What is Internet?

Internet is a collection of interconnected computer networks linked by copper wires, fiber optic cables and wireless connections etc,

22. What is Web?

The Web is a collection of interconnected documents and other resources linked by hyperlinks and URL's.

23. What is ARPANET?

It is acronymy for Advanced Research Project Agency NET, created by Department of Defence (DOD).

24. What is a Web page?

A webpage or web page is a document or resource of information that is suitable for the World Wide Web and can be accessed through a web browser and displayed on a computer screen. This information is usually in HTML or XHTML format, and may provide navigation to other web pages via hypertext links.

25. Define Website?

A website is a collection of WebPages, images, videos or other digital assets that is based on one or more web servers, usually accessible through the Internet.

26. What is an IP?

IP stands for Internet Protocol, which is the language, that computer used to communicate over the Internet.

27. Name some of the services of Internet or Internet applications?

- E-Mail.
- Chat.
- Remote Access.
- File Sharing.
- Voice Telephony.
- File Transfer Protocol.
- Telnet.
- Internet Relay Chat.
- Video Conferencing.

28. What is TCP/IP?

Transmission Control Protocol/Internet Protocol, the suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP.

29. What is IP Address?

Internet protocol address is the address of a device attached to an IP network (TCP/IP network). Every client, server and network device is assigned an IP address, and every IP packet traversing an IP network contains a source IP address and a destination IP address.

30. Name any four application software packages.

- Word Processors
- Spreadsheets
- Data bases
- Graphics Presentations
- Web browsers

UNIT III

PROBLEM SOLVING AND OFFICE AUTOMATION

1. What is a program?

A **program is a set** instruction written to carryout a particular task, so that computer can perform some specified task.

2. What is algorithm?

Algorithm means the logic of a program. It is a step-by-step description of how to arrive at a solution of a given problem.

3. What are the steps to solve the problem in a computer system?

- Problem must be analyzed thoroughly.
- Solution method is broken down into a sequence of small tasks.
- Based on this analysis, an algorithm must be prepared to solve the problem.
- The algorithm is expressed in a precise notation. This notation is known as “Computer Program”.
- The Computer program is fed to the computer.
- The instruction in the program executes one after another and outputs the expected result.

4. How can you measure the quality of algorithm?

The primary factors that are often used to judge the quality of an algorithm are time requirement, memory requirement, and accuracy of solution.

5. What are the characteristics of an algorithm?

1. In algorithms each and every instruction should be precise.
2. In algorithms each and every instruction should be unambiguous.
3. The instructions in an algorithm should not be repeated infinitely.
4. Ensure that the algorithm will ultimately terminate.
5. The algorithm should be written in sequence.
6. It looks like normal English.
7. The desired result should be obtained only after the algorithm terminates.

6. How many types the Algorithm can be represented?

- Normal English
- Program
- Flowchart
- Pseudo code
- Decision table

7. What is decision table?

A decision table is a table containing the selection of conditions to be tested and how those conditions should be nested to arrive at the proper action.

8. What is Flowchart?

A Flowchart is a pictorial representation of an algorithm. It is often used by programmer as a program planning tool for organizing a sequence of step necessary to solve a problem by a computer.

9. What is the need of Flowchart symbols?

Each symbol of different shapes denotes different types of instructions. The program logic through flowcharts is made easier through the use of symbol that has standardized planning.

10. What is pseudo code?

“Pseudo” means imitation of false and “code” refers to the instruction written in the programming language. Pseudo code is programming analysis tool that is used for planning program logic.

11. What is structured programming?

A structured programming is a more specific approach to solve a programming problem by using only the three basic logic structures. They are sequence logic, selection logic and Iteration logic.

12. What are the rules for drawing a flowchart?

- The standard symbols should only be used.
- The arrowheads in the flowchart represent the direction of flow of control in the problem.
- The usual direction of the flow of procedure is from top to bottom or left to right.
- The flow lines should not cross each other.
- Be consistent in using names and variables in the flowchart.
- Keep the flowchart as simple as possible.
- Words in the flowchart symbols should be common statements and easy to understand.
- Chart main line of logic, and then incorporate all the details of logic.
- If a new page is needed for flowcharting, then use connectors for better representation.
- Don't chart every details or the flowchart will only be graphical represented.

13. What is sequence logic?

Sequence logic is used for performing instructions one after another in a sequence.

14. What is selection logic?

Selection logic is used for selecting the process path out of two or more alternative paths in the program logic. It uses three control structures called if...then, if...then...else and switch...case.

15. What is Iteration logic?

Iteration logic is used for producing loops in program logic when one or more instructions may be executed several times depending on some condition. It uses two control structures called do...while, and repeat...until.

16. What are the rules for writing pseudo code?

- Write on statement per line.
- Capitalize initial keywords.
- Indent to show hierarchy.
- End multi line structure.
- Keep statements language independent.

17. What are the features of word processors?

- Fast
- Permanent storage
- Formatting

- Editing
- Graphics
- OLE
- Spell Check
- Mail merge

18. How many types a document can be viewed?

- * Normal view * Online layout
- * Outline view * Page layout view

19. What are the menus available in Ms-Word?

- File
- Edit
- View
- Insert
- Format
- Tools
- Table
- Window
- Help

20. What is meant by Formatting?

Formatting is the process of changing the appearance of the text in the document.

21. Specify any five toolbars available in Ms-Word?

- Standard
- Formatting
- Drawing
- Tables & Borders
- WordArt etc.,

22. How many Line Spacing options available in Ms-Word?

- Single
- 1.5 Lines
- Double
- At least
- Exactly
- Multiple

23. What are the Text cases available in Ms-Word?

- Sentence case
- lower case
- UPPER CASE
- Title Case
- tOGGLE CASE

24. What is Subscript and Superscript?

The Subscript format places the text slightly below a line of normal printed text.

Eg:-H₂O

The Superscript format places the text slightly above a line of normal printed text.

Eg:-A²+B²

25. What is Tab and what are the Tab settings available in word?

Tab is used to control the alignment of text with in the document. Word provides seven types of tabs.

- Standard (left) tab
- Center tab
- Right tab
- Decimal tab
- Bar tab
- First line Indent tab
- Hanging Indent tab

26. Define Headers and Footers.

Header allows text, page number or section titles to appear on every page of document at the top position.

Footer allows text, page number or section titles to appear on every page of document at the bottom position.

27. What is a Table?

A Table is grid of rows and columns.

28. What is a Clipart?

Clipart is the attractive pre-defined, pre-colored pictures available in Ms-Word office suite.

29. Define a Template.

Template is a special kind of document that produces basic tools for shaping a final document.

30. Define operator and formula.

Operator:-An operator is a symbol, which can do a particular action on the operands.

Formula:-Is the mathematical expression used to carryout a particular process.

UNIT IV

INTRODUCTION TO 'C'

1. Define do-while loop.

It is a repetitive control structure and executes the body of the loop once irrespective of the condition then it checks the condition and continues the execution until the condition become false.

2. What is meant by break statement?

The break statement is used to terminate the loop. When the keyword break is used inside any loop, the control automatically get transferred to the first statement after the loop.

3. What is meant by continue statement?

Continue statement is used to transfer the control back to the beginning of the loop, before executing the rest of the statements inside the loop.

4. Define goto statement.

The goto statement transfers the control unconditionally from one place to another place in the program.

5. What is meant by global variable?

The variable that is used in more than one function throughout the program are called global variables and declared outside of all the function.

6. Define logical and data errors

Logical errors: These are the errors, in which the conditional and control statements cannot end their match after some sequential execution.

Data errors: These are the errors, in which input data given, is not in syntax as specified in the input statement.

7. List out the characteristics of a program.

- Clarity
- Integrity
- Simplicity
- Efficiency
- Generality

8. What is meant by tokens?

The tokens are usually referred as individual text and punctuation in the passage of text. The C

language program can contain the individual units called the C tokens.

9. What are Keywords?

Keywords are reserved words that have standard and pre-defined meaning in C .These keywords can be used only for their intended purpose.

10. What are the types of input statements available in C?

- Formatted I/O statements
- Unformatted I/O statements

11. Define getchar () function.

The getchar () function reads a single character from a standard input device. This function do not requires any arguments.

12. What is meant by local variable?

The variables which are defined inside a function block or inside a compound statement of a function sub-program are called local variables.

13. Define constant.

The items whose values cannot be changed during the execution of program are called constants.

14. Define statements.

Statements can be defined as set of declarations or sequence of action. Statement causes the program to perform some action.

15. What is Ternary operator?

Tenary Operator is a conditional operator with symbols ? and :

Syntax : variable=exp1?exp2:exp3

If the exp1 is true variable takes the value of exp2. If the exp1 is false, variable takes the value of exp3.

16. What is conversion specification?

The conversion specification are used to accept or display the data using the INPUT/OUTPUT statements.

17. What is the difference between ‘a’ and “a”?

Where ‘a’ is a character constant and “a” is a string.

18. What is a String?

String is an array of characters.

19. What are the different data types available in ‘C’?

There are four basic data types available in ‘C’

- i) int
- ii) float
- iii) char
- iv) double

20. What are the Bitwise operators available in ‘C’?

- & - Bitwise AND
- | - Bitwise OR
- ~ - One’s complement
- >> - Right Shift
- << - Left Shift
- ^ - Bitwise XOR are called bit field operator

UNIT V

FUNCTIONS AND POINTERS

1. What is meant by user defined function?

The function defined by the user according to their requirements is called user defined function.

2. Define call by value.

When the value is passed directly to the function it is called call by value. In call by value only a

copy of the variable is only passed so any changes made to the variable does not reflect in the

calling function.

3. Define call by reference.

When the address of the value is passed to the function it is called call by reference. In call by reference since the address of the value is passed any changes made to the value reflect in the calling function.

4. What is meant by recursion and name two applications?

This is where a function repeatedly calls itself to perform calculations. Typical applications are games and Sorting trees and lists.

5. Define one – dimensional array.

The collection of data items can be stored under a one variable name using only one subscript, such a variable is called one – dimensional array.

6. Give any two features of pointers.

- Pointer reduces the length and complexity of the program
- Pointers are an efficient way of handling data

7. What is meant by Preprocessor?

Preprocessor is the program, that processes our source program before the compilation.

8. How can you return more than one value from a function?

Function returns only one value. By using pointer we can return more than one value.

9. Is it possible to place a return statement anywhere in 'C' program?

Yes. The return statement can occur anywhere.

10. A program can contain more return statements.

Yes. The program can contain any number of return statements.

11. What are the main elements of an array declaration?

There are three elements there called Array name, Type and Size.

12. What is the starting index of an array?

The starting index of an array is 0 (zero).

13. Is it possible to declare an array subscript with float data type?

No. The array subscript is always an int data type only.

14. Specify the use of Header files in 'C' language.

- <stdio.h> contains standard I/O functions.
- <ctype.h> contains character handling functions.
- <stdlib.h> contains general utility functions.

<string.h> contains string manipulation functions.

<math.h> contains mathematical functions.

<time.h> contains time manipulation functions.

15. Is it possible to nest the functions?

Yes. The functions can be nested.

16. What is the program development life cycle?

These are the sequence of events considered by the programmer to design and develop efficient programs.

17. What are the types of errors occurred in C program?

There are four types of errors occurred during the program execution.

1. Syntax errors
2. Runtime errors
3. Logical errors
4. Latent errors

18. What are the types of testing techniques?

1. Human testing
2. Computer based testing

19. What is meant by debugging?

Debugging is the process of locating and isolating the errors.

20. Specify any five syntax error messages.

1. Missing semicolon
2. Missing braces
3. Missing quotes
4. Improper comment character
5. Undeclared variables

21. Define Pre-processor.

It is a program that process the source code before it passes to the compiler.

22. What are the pre-processor directives?

1. Macro inclusion
2. Conditional inclusion
3. File inclusion

23. What are the dynamic memory allocation?

Allocating the memory at run time is called dynamic memory allocation.

24. Dynamic memory allocation function.

Malloc(), free(), calloc(), realloc()