SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE – 35

DEPARTMENT OF COMPUTER SIENCE AND ENGINEERING (UG & PG)

First Year, 1ˢᵗ Semester

2 Marks Question and Answer

Subject Code & Name: 19CST101 Programming for Problem Solving

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UNIT - 1
INTRODUCTION TO PROBLEM SOLVING TECHNIQUES

1. Define computers?

A computer is a programmable machine or device that performs pre-defined or programmed computations or controls operations that are expressible in numerical or logical terms at high speed and with great accuracy.

(or)

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. What are the basic operations of computer?

· Input

· Process

· Storing

· Controlling and

· Output.

3. What are the characteristics of computer?

· Speed

· Accuracy

· Automation

· Endurance

· Versatility

· Storage and

· Cost reduction

4. Define data and information.

Data: Raw material for information processing

Information: The processed data is called information.

5. List out the operations of CPU.

CPU performs all the calculations, co-ordinates all the units of the computer, interprets the instruction and stores the data's.

6. Define system software.

A set of program that governs the operation of a computer system and makes the hardware works. It controls the internal operations of the computer.

7. What is software?

Software is a set of instruction or program, which are useful for performing a task.

8. Define operating system?

A collection of program used to control the entire operation of the computer. It co-ordinates the hardware and software.

9. What is application software?

Software which is used to solve a specific task is called application software.

10. What is meant by Information technology?

IT refers to the creation, gathering, processing, storage and delivery of information.

11. What is Algorithm?

Algorithm means the logic of a program. It is a step by step description of a program.

12. List out the way how algorithm may be represented?

· Normal English

· Flow chart

· Pseudocode

· Decision table

13. Define compiler.

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

14. Define Assembler.

It is a program used to convert the assembly language program into machine language.

15. Define Interpreter.

It is a program used to convert the high level language program into machine language line by line.

16. What are the types of programming language?

· Machine language

· Assembly language

· High level language

17. Define flow chart.

Flow chart is the pictorial representation of a program.

18. List out the basic design structure?

· Sequence structure

· Selection structure

· Loop structure

19. List out the any three advantages of flowchart.

· Better communication

· Effective synthesis

· Effective analysis

20. What is Data and Information?

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

21. Give the applications computer?

Word Processing
Internet
Desktop publishing
Digital video or audio composition
Mathematical Calculation
Robotics
Weather analysis

22. How will you classify computer systems? (JAN2009)

Based on physical size, performance and application areas, we can generally divide computers into four major categories:

1. Micro computer
2. Mini Computer
3. Mainframe computer and
4. Super Computer

23.Specify the Electronic components used for different computer generations.

Generations	Electronic Components
I	Generation Vacuum tubes
II	Generation Transistors
III	Generation Integrated Circuits
IV	Generation Microprocessors
V	Generation Artificial Intelligence

24. What are the languages used in computer generations.

Generations	Languages used
I	Generation Machine Language
II	Generation Assemble Language, Mnemonics
III	Generation High Level Language, BASIC, PASCAL, COBOL,
IV	Generation 4GL
V	Generation Artificial Intelligence

25. What are the components of the computer systems?

Basic components of the computer system are Input Unit, Central Processing Unit, Secondary Storage Unit and Output Unit.

26. What is an ALU?

Arithmetic logic unit, the part of a computer that performs all arithmetic computations, such as addition and multiplication, and all logical operations such s comparison operations. The ALU is one component of the CPU (central processing unit).

27. What is a CPU?

The CPU (central processing unit) is the part of a computer controls the interpretation and execution of instructions. Generally, the CPU is a single microchip.

28. What is a Statement?

Statement is a single action in a computer. In a computer statements might include some of the following actions

1. **input data**-information given to the program
2. **process data**-perform operation on a given input
3. **output data**-processed result

29. Define Mainframe computer?

Mainframes are computers used mainly by large organizations for critical applications, typically bulk data processing such as census, industry and consumer statistics, enterpriseresource planning, and financial processing. The term probably had originated from the early mainframes, as they were housed inenormous, room-sized metal boxes or frames.

30. Define Mini computers?

A mini computer is a multi-user or time-sharing system. It is used for medium scale data processing such as Bank account processing, Payroll processing etc., Mini computer process greater storage capacity and larger memories as compared to micro computer.

31. Define super computer?

The fastest type of computer. Supercomputers are very expensive and are employed for specialized applications that require immense amounts of athematical calculations.control unit and ALU. Today, the CPUs of almost all computers are contained on a singlec chip.For example, weather forecasting requires a supercomputer. Other uses ofsupercomputers include animated graphics, fluid dynamic calculations, nuclear energyresearch, and petroleum exploration.

32. What is a volatile and non-volatile memory?

Volatile memory: also known as volatile storage is computer memory that requires power to maintain the stored information, unlike non-volatile memory which does not require a maintained power supply. It has been less popularly known as temporary memory.

Non-volatile memory: nonvolatile memory, NVM or non-volatile storage, is computer memory that can retain the stored information even when not powered.

33. What is a primary memory?

The primary memory or the main memory is part of the main computer system. Theprocessor or the CPU directly stores and retrieves information from it. This memory is accessed by CPU, in random fashion. That means any location of this memory can be accessed by the CPU to either read information from it, or to store information in it.

34. What is a secondary memory?

The secondary memory is much slower and also less costly. It stores the data permanently unless it is erased. Examples: Floppy disk storage media,Hard disk, CD / DVD, Pen drive, Memory chips etc.,

35. Define number system.

The term computer numbering formats refers to the schemes implemented in digital computer and calculator hardware and software to represent numbers.
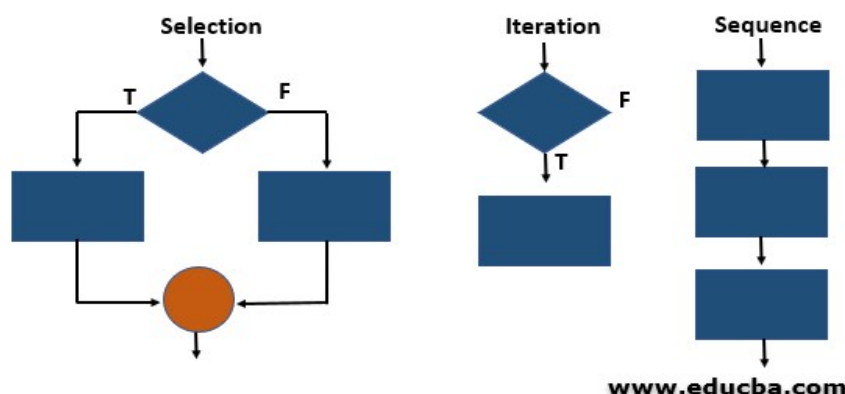
36. Define State.

Transition from one process to another process under specified condition with in a time is called state.

37. Define Control Flow.

The process of executing the individual statements in a given order is called control flow. The control can be executed in three ways
1.sequence
2.selection
3.iteration

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38. What is Sequence in algorithm?

All the instructions are executed one after another is called sequence execution.

39. What is Iteration in algorithm?

In some programs, certain set of statements are executed again and again based upon conditional test. i.e. executed more than one time. This type of execution is called looping or iteration.

40. What is Selection in algorithm?

A selection statement causes the program control to be transferred to a specific part of the program based upon the condition.

If the conditional test is true, one part of the program will be executed, otherwise it will execute the other part of the program.

41.Define Function.

Function is a sub program which consists of block of code(set of instructions) that performs a particular task.

For complex problems, the problem is been divided into smaller and simpler tasks during algorithm design.

42.Write the benefits of using Function.

1. Reduction in line of code
2. code reuse
3. Better readability
4. Information hiding
5. Easy to debug and test
6. Improved maintainability

43. Differentiate analog and digital computers? (JAN 2010)

S No	Analog Computer	Digital Computer
1	Process measured data	Process discrete data
2	Analog computers are not precise	Digital computers are more precise
3	Processing speed is low.	Processing speed is high.
4	Less accuracy.	More accuracy.

44. 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.

45. 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.

46. What are the rules for writing pseudo code? (MAY 2010)

· Write on statement per line.

· Capitalize initial keywords.

· Indent to show hierarchy.

· End multi line structure.

· Keep statements language independent.

45. What is recursion?

A function that calls itself is known as recursion. Recursion is a process by which a function calls itself repeatedly until some specified condition has been satisfied.