

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

First Semester  
Computer Science

Foundation Course – PROBLEM SOLVING  
TECHNIQUES

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer:

- Which of the following are characteristics of a computer?
  - Versatile
  - Accuracy
  - Reliability
  - All of the above

- Programmers use \_\_\_\_\_ known as loops.
  - Repetition structure
  - Conditional structure
  - Goto
  - Unconditional structure
- Classification of data by attributes is called:
  - Quantitative classification
  - Chronological classification
  - Qualitative classification
  - Geographical classification
- Objects in a sequence that have the same type, is called
  - Arrays
  - Operators
  - Functions
  - Stacks
- Which of the following data flow diagram (DFD) symbols is represented by two parallel lines?
  - Data-flow symbol
  - External entity symbol
  - Internal entity symbol
  - Data store symbol

- A program is a sequence of \_\_\_\_\_ written in a programming language.
  - Lines
  - Functions
  - Instructions
  - Codeword
- What are the entities whose values can be changed called?
  - Constants
  - Variables
  - Modules
  - Tokens
- In Structure charts modules are described as
  - Circle
  - Triangle
  - Rectangle
  - Elipse
- Most common error that occur in selection structure is \_\_\_\_\_.
  - Compiler error
  - Syntactical error
  - Segmentation fault
  - Logical error

- A filename without path information
  - File name
  - Complete filename
  - Directory name
  - Relative filename

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

- Describe the various types of computers.

Or

  - What are translator and interpreter?
- Define algorithm. Mention the features of good algorithm.

Or

  - What is Pseudocode? Explain with example.
    - How it is used as a problem solving tool?
- When to use relational and logical operators?

Or

  - How nested loop works?

14. (a) Define and differentiate numeric and character based data.

Or

(b) What is an array? Why we need Arrays?

15. (a) Describe:

(i) Subprograms

(ii) Value and reference parameter.

Or

(b) Define function with example.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) With a neat diagram explain the basic structure of a computer.

Or

(b) Elucidate the different types of programming language.

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17. (a) Illustrate different phases in program development cycle.

Or

(b) What is Pseudo code? Explain.

18. (a) What are the selecting from several alternatives in selection structure? Explain.

Or

(b) Explain Counter control loop.

19. (a) Write about two dimensional array?

Or

(b) Mention some of the string operations and its uses.

20. (a) Why we need DFD? Mention its symbol and types.

Or

(b) Write about file and file creation procedure of a sequential file.

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