

**Problem Solving Methodologies and Programming in C (Theory) (Major-1)**

Time: 2:00 Hours

Marks: 50

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

**Que.1 Attempt the following (any two) (10)**

- (1) What is token? Explain giving example
- (2) Explain the history of C language
- (3) Answer the following :
  - (A) List and explain various data types in C
  - (B) Explain the concept of constant with example
- (4) Answer the following:
  - (A) What is variable? Explain giving example
  - (B) Explain various pre-processors

**Que.2 Attempt the following (any two) (10)**

- (1) What is branching? Explain giving example
- (2) Explain looping? Explain its usefulness
- (3) Answer the following :
  - (A) Explain if statement with example
  - (B) Explain for loop with example
- (4) Answer the following :
  - (A) How switch – case statement works? Explain giving example
  - (B) Differentiate between entry controlled loop and exit controlled loop

**Que.3 Attempt the following (any two) (10)**

- (1) What is header file in C? Explain its usefulness in C programming
- (2) Explain the concept of UDF with example
- (3) Answer the following :
  - (A) Explain with example : nesting of functions
  - (B) Explain with syntax any two mathematical functions
- (4) Answer the following:
  - (A) Differentiate between: scanf() and gets()
  - (B) Explain malloc() with example

**Que.4 Attempt the following (any two) (10)**

- (1) What is array? Explain its usefulness in programming
- (2) Explain the concept of structure with example
- (3) Answer the following :
  - (A) Explain : array of structure
  - (B) Explain with example : nesting of structures
- (4) Answer the following :
  - (A) Differentiate between : array and structure
  - (B) Explain multi dimensional array with example

**Que.5 Attempt the following (any two) (10)**

- (1) Explain the concept of pointers with its usefulness
- (2) Write a detailed note on: data file
- (3) Explain with example: Command line arguments
- (4) What is dynamic programming? Explain giving example

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