



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester- 4) External Examination – 2026
US04MACSC01: Advanced C Programming and Introduction to Data Structures

Date: 24-03-2026, (Tuesday)

Time: 01:45 PM to 04:15 PM (2.5 hrs)

Total marks: 50



Q-1 Multiple-choice questions.

[10]

- (1) Structures cannot be initialized at _____
(a) Run time (b) Assignment statement
(c) Compile time (d) Structure definition
- (2) Which statement is false about structure?
(a) Nested structure (b) Multiple members
(c) Non-continuous memory (d) Structure array
- (3) Which of the following allows a portion of memory to be shared by different types of data?
(a) Array (b) Structure
(c) Union (d) File
- (4) What are two predefined FILE pointers in C?
(a) stdout and stderr (b) stdout and stdio
(c) console and error (d) stdio and stderr
- (5) Which functions are used to write integer numbers into a file?
(a) fprintf() (b) putc()
(c) putw() (d) None of these
- (6) Which of the following data structures are indexed structures?
(a) linear arrays (b) Linked List
(c) Both A and B (d) None of these
- (7) Which of the following is an operation of a Stack data structure?
(a) Top (b) Bottom
(c) Peep (d) None of these
- (8) Which of the following is TRUE for a Queue data structure?
(a) Linear (b) Non-primitive
(c) Both A and B (d) None of these

- (9) A linked list in which last node pointing to the first node is known as ____.
- (a) Singly linked list (b) Doubly linked list
- (c) Circular linked list (d) None of these

- (10) Binary search is ____ type of search
- (a) Linear search (b) Non linear search
- (c) Address calculation search (d) Both A and B

Q-2 Explain array of structures using suitable examples.

OR

[10]

Q-2 Explain pointer to structure array using appropriate example.

[10]

Q-3 Explain character handling functions used in file by giving example.

OR

[10]

Q-3 Explain functions used to handle integer numbers in file with example.

[10]

Q-4 Explain a STACK with an example. Write algorithm to perform various operations over a stack.

[10]

OR

Q-4 Explain a Queue with an example. Write algorithm to perform various operations on a queue.

[10]

Q-5 Explain bubble sort technique? Write an algorithm for bubble sort.

[10]

OR

Q-5 Which searching techniques are used to search element from array? Explain any one with example.

[10]

==XXX==

