

(A-1) Seat No.: \_\_\_\_\_

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## SARDAR PATEL UNIVERSITY

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)

SEMESTER - I

PGDCA-102 (C AND DATA STRUCTURE)

21<sup>ST</sup> OCTOBER, 2016, Friday

Time : 10:00 a.m. to 1:00 p.m.

Marks : 70

Note : Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.

**Q-1 Pick up the most appropriate answer from the given alternatives and write in your answer book. (8)**

- (i) \_\_\_\_\_ is a step by step approach to solve a problem.  
[A] Flowchart [B] Algorithm [C] Program [D] None of these
- (ii) In C language, \_\_\_\_\_ statement terminates the execution of loop.  
[A] continue [B] break [C] stop [D] None of these
- (iii) C statements are terminated by a \_\_\_\_\_.  
[A] semicolon (;) [B] colon (:) [C] dot (.) [D] None of these
- (iv) In C language, ++ is known as \_\_\_\_\_ operator.  
[A] increment [B] decrement [C] addition [D] None of these
- (v) The operations FRONT and REAR are related to \_\_\_\_\_ data structure.  
[A] Array [B] Stack [C] Queue [D] List
- (vi) A linked list is a \_\_\_\_\_ data structure.  
[A] Linear [B] Non-linear [C] Both [A] & [B] [D] None of these
- (vii) In C language, we can clear the output screen area using \_\_\_\_\_ function.  
[A] clrscr() [B] clear() [C] cls() [D] clearscreen()
- (viii) Assume that ARY is an array of integers. We can access the first element of ARY using \_\_\_\_\_.  
[A] ARY[1] [B] ARY[0] [C] ARY[2] [D] ARY[3]

**Q-2 Attempt the following: (ANY SEVEN) (14)**

- I. What is C language? Why is it used?
- II. Write an algorithm to find maximum number out of given two numbers.
- III. What is a variable? List variable naming rules.
- IV. Differentiate : Compiler and Interpreter.
- V. What is keyword? Write down any four keywords of a C language.
- VI. Differentiate: stack and queue.
- VII. List down the common operations that are performed on a data structure.
- VIII. Explain ternary operator with an example.
- IX. Explain scanf() function with an example.

**Q-3 (a) Draw a block diagram of Computer and explain its components. (6)**

**(b) Explain different languages of a Computer. (6)**

OR

**(b) Explain basic characteristics of a computer. (6)**

- Q-4 (a)** Explain basic data types of a C language. (6)  
**(b)** Define: Array. Explain by taking suitable example, the declaration, initialization and use of an array in C language. (6)

**OR**

- (b)** What is Flow chart? Draw different symbols of flowchart and explain its meaning. (6)

- Q-5 (a)** What is data structure? Discuss various types of a data structures in brief. (6)  
**(b)** What is 'Stack'? Explain various stack operations and applications of a stack. (6)

**OR**

- (b)** What is a String? Explain any TWO string handling functions with an example. (6)

- Q-6 (a)** Write a note on 'Linked List'. (6)  
**(b)** Explain in brief about 'Tree', 'Graph' and 'File & File Organization'. (6)

**OR**

- (b)** Explain for loop and while-loop with an example. (6)

— X —  
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