[A-33]

SARDAR PATEL UNIVERSITY

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)

SEMESTER – I

PS01CDCA22 (C AND DATA STRUCTURE)

11TH APRIL, 2018

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) The extension of a C program is_____.
[A] .cs   [B] .c   [C] .prg   [D] none of these

(ii) In C language, statements are terminated with _____.
[A] : (Colon)   [B] ; (Semicolon)   [C] #   [D] none of these

(iii) In scanf(), _____ format specifier is used for charater data type.
[A] %f   [B] %d   [C] %c   [D] none of these

(iv) void main()
{
    int A=7,B=8,C=1,R;
    R=A+B+C++;
}
What will be the value of R after the execution of above code?
[A] 15   [B] 16   [C] 1   [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, one can clear the output screen area using _____ function.
[A] clrscr()   [B] clear()   [C] cls()   [D] None of these

(viii) FIFO means _____.
[A] First In First Out   [B] Fast in First Out
[C] Fast In Fast Out   [D] First In Fast Out

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

I. Differentiate : Compiler and Interpreter.
II. Define the term 'Algorithm' with an example.
III. Define the term 'Flowchart' with an example.
IV. Write down any four keywords of a C language.
V. What is the use of printf() and scanf() functions in C?
VI. What is a variable? List basic data types of C language.
VII. Explain: ?: operator with an example.
VIII. List down the main operations that are performed on a data structure.
IX. What is user-defined function?
X. Explain the use of getchar() with an example.

(P.T.O.)

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

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

OR

(b) Explain different languages of a computer. (6)

Q-4 (a) Explain : if statement and nested-if statement with its syntax and example. (6)

(b) Define: Array. Explain by taking suitable example, the declaration, initialization and use of an array in C language. (6)

OR

(b) Explain switch statement and do while loop statement with an example. (6)

Q-5 (a) What is data structure? Discuss various types of a data structures in brief. (6)

(b) Explain QUEUE data structure. Write an algorithm to insert an element in queue in front. (6)

OR

(b) What is 'Stack'? Explain various stack operations and applications of a stack. (6)

Q-6 (a) Explain for loop and while-loop with an example. (6)

(b) Discuss linked list in detail with appropriate example. (6)

OR

(b) Write a C program to read marks of 50 students and then find & display maximum mark, minimum mark. (6)