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**11N (CP)**

**[ 19-HRPGKOW-M1S(N) 20M ]**

**PGDCA 1st Semester (New) Exam., 2019 (W)**

# COMPUTER PROGRAMMING USING C

**( Theory )**

[ PGCA/ScIT S1–03 ]

*Full Marks* : 50

*Time* : 2 hours

*The figures in the margin indicate full marks for the questions*

**1.** Answer the following questions : 1×4=4

*(a)* Define pseudocode with an example.

*(b)* What are the basic data types used in C?

*(c)* Give the syntax for declaring an array.

*(d)* Write the meaning of the following statement :

int substract (int, int);

**2.** Fill in the blanks : 1×4=4

*(a)* A variable is an _____ to store value.

*(b)* The operator that acts upon a single operand to produce a new value is called _____ operator.

*(c)* An array of characters is called _____.

*(d)* _____ is the header file for clrscr( ) function.

**3.** Choose the correct option from the following : 1×4=4

*(a)* C language has

*(i)* 23 keywords

*(ii)* 8 keywords

*(iii)* 32 keywords

*(iv)* 64 keywords

*(b)* How many times will the following loop be executed?

```
ch = 'b';

while (ch >= "a" && ch <= "z")
{
    ......
    ......
    ......
}
```

*(i)* 0

*(ii)* 25

*(iii)* 26

*(iv)* 1



( Continued )

(c) Initialization of structure means

(i) assigning some constants to the members of the structure

(ii) assigning some variables to the members of the structure

(iii) initializing data types

(iv) initializing data variables

(d) Which of the following is not a preprocessor directive?

(i) #define

(ii) #include

(iii) #exclude

(iv) #endif

4. Answer any *five* questions from the following : 2×5=10

(a) Differentiate between algorithm and flowchart.

(b) How are variables initialized? Explain with an example.

(c) What is the role of conditional statements in programming? Give an example.

(d) What is dynamic memory allocation?

(e) What are string handling functions? Can operations on the strings be done without using these string library functions?

(f) Explain the syntax of switch( ) statement.

**5.** Answer any *four* from the following questions : 4×4=16

*(a)* Define variables and constants in C. What are the different types of constants in C? Give suitable examples. 1+2+1=4

*(b)* What is an operand? What is the relationship between operator and operand? Explain with suitable examples. 1+2+1=4

*(c)* Write a C program to display 10 natural numbers using for loop except the number 7. 4

*(d)* How is address translation done in case of 2-D arrays? Find the memory address of D[4][8] for an array D[10][15] and when the word size is 4 and base address is 100. 2+2=4

*(e)* Define a macro. State the similarities and differences between macros and functions. 1+3=4

**6.** Answer any *two* from the following questions : 6×2=12

*(a)* Write a program in C using switch case to display a menu that offers five options—read three numbers, calculate total, calculate average, display the smallest value and display the largest value. 6

*(b)* What is meant by a function call? From what part of a program can a function be called? Explain with a suitable example. 2+2+2=6

*(c)* Write a C program to count number of vowel, blank space from an existing file. 6

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