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Co-304/PUC/3rd Sem/2018/M

PROGRAMMING USING C

Full Marks – 70

Time – Three hours

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

SECTION – A

Marks – 25

All questions are compulsory.

1. Choose the correct alternatives : $1 \times 10 = 10$

(i) What would be value of c ?

{

int c;

float a, b;

a = 245.05;

b = 40.02

c = a + b

}

(a) 285.07

(b) 285.0

(c) 2850

(d) 285

[Turn over

(ii) Which is more appropriate for reading in multi word string ?

- (a) gets () (b) print ()
(c) scanf () (d) puts ()

(iii) The operator && in 'C' language is a

- (a) OR operator
(b) NOT operator
(c) AND operator
(d) None of the above

(iv) What is the final value of x when the code
int y, for (y = 0, y < 10, y++) {} is executed ?

- (a) 10 (b) 9
(c) 0 (d) 1

(v) A labelled statement consists of an identifier followed by a

- (a) ; (b) :
(c) . (d) None of these

(vi) Array is a collection of

- (a) Identical data objects
- (b) Different data objects
- (c) Both (a) and (b) above
- (d) None of these

(vii) Which of the following is returned by function "strcmp" if the strings that are compared are identical ?

- (a) 0
- (b) 1
- (c) 2
- (d) true

(viii) The declaration *void function (int)* indicates function which

- (a) has no arguments
- (b) returns nothing
- (c) Both (a) and (b) above
- (d) None of the above

(ix) Which is the correct way to define a pointer ?

(a) `int_ptr x;` (b) `int * ptr;`

(c) `*int ptr;` (d) `*X`

(x) The mode is used to open a file for reading and writing

(a) `r +` (b) `w +`

(c) Both (a) and (b) (d) None of these

2. Write down whether the following statements are true or false : 1×10=10

(i) Every C program need not have main () function.

(ii) Task of continue keyword is to transfer the control of program at the next step of the loop.

(iii) The function scanf () can take variable number of arguments.

(iv) The operating system converts the 'C' program into machine language.

(v) Statements inside a do-while loop will be executed at least once.

(vi) There is no difference between '\0' and '0'.

- (vii) A loop may contain another loop in its body.
- (viii) Comments in the program make debugging of the program easier.
- (ix) Automatic arrays can not be initialised.
- (x) "A" is a string but 'A' is a character.

3. Fill up the blank space with the appropriate word(s) or phrase(s) from the list below: $1 \times 5 = 5$

A. null	B. logical	C. size of (int)
D. relational	E. randomly	F. break
G. Strcat ()	H. register	I. Str ()

- (i) All strings must end with a _____ character.
- (ii) The preferred storage class if fast access is required for a variable is _____.
- (iii) _____ statement forces immediate exit from any loop.
- (iv) Array elements can be accessed _____.
- (v) _____ function appends a string to another string.

SECTION - B

Marks - 45

4. Answer any *five* of the following questions:

$2 \times 5 = 10$

- (a) Distinguish between structure and union.
- (b) What is a preprocessor and what are the advantages of preprocessor ?
- (c) Define an array. How two dimensional array initializes ?
- (d) What is pointer ? How is it intialized ?
- (e) Mention four functions used for dynamic memory manipulation.
- (f) Differentiate between call by value and call by reference.

5. Answer any *five* of the following questions :

$3 \times 5 = 15$

- (a) Differentiate between do-while loop and while loop with the help of one example for each.
- (b) Differentiate function declaration and definition of a function. Give an example.

- (c) Write a 'C' program to compute the length of the string using string function.
- (d) What do you understand by actual parameter and formal parameter of a function.
- (e) Write an algorithm to test whether a given number is odd or even.
- (f) Explain the term recursion with an example.

6. Answer any *four* of the following questions :

$$5 \times 4 = 20$$

- (a) Write a C program which accepts a number and print the sum of digits of this number.
- (b) Write a C program to read a string and print how many words are stored in the string.
- (c) Write a C program to write student roll number and student name in a file.
- (d) Write a program to input a 3×3 matrix and to print its addition.

- (e) Write a suitable 'C' program to print the following structure :

```
1
121
12321
1234321
```

The number of rows should be input from the user.

- (f) Explain arrays of pointer with an example.