

Professional Course Examination, November/December 2019

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-105

(Programming Language Through C)

(Pre-Revised)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 15)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

1. Which keyword is used for skipping part of the loop?

(a) Skip ()

(b) Continue ()

(c) Break ()

(d) Jump ()

2. What will be the result of (int)21·3/(int)4·5?

(a) 4·75 ()

(b) 4 ()

(c) 5·25 ()

(d) 5 ()

3. Which of the following is a valid function call (assuming the function exists)?

(a) funct; ()

(b) funct x, y ()

(c) funct(); () ✓

(d) int funct(); ()

4. Which of the following gives the memory address of integer variable x?
 (a) *x; () (b) int x; ()
 (c) &x; () (d) address(x) ()
5. Which operator is used to access structure elements using a pointer to a structure variable?
 (a) Dot (.) () (b) Arrow (->) ()
 (c) Comma (,) () (d) Semicolon (;) ()
6. How many times is a do-while loop guaranteed to loop?
 (a) One () (b) Two ()
 (c) Three () (d) Zero ()
7. C programming language was evolved from which of the following ALGOL, BCPL and B?
 (a) ALGOL () (b) BCPL ()
 (c) B () (d) All of the above ()
8. Which of the following functions compares two strings treating capital letters and small letters are same?
 (a) compare(); () (b) strcmp(); ()
 (c) strcmpi(); () (d) strncmpi(); ()
9. Which of the following is valid character constant?
 (a) '/' () (b) '\0' ()
 (c) 'xyz' () (d) '\07' ()
10. When fopen() is not able to open a file, it returns
 (a) EOF () (b) NULL ()
 (c) Runtime Error () (d) Compile Error ()

Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

11. The value of a variable can be assigned to a pointer variable.
(T / F)
12. The printf format code for printing a decimal integer number is %f.
(T / F)
13. If $x = 15$, $y = 10$ and $z = (x > y) ? x : y$; the value of z would be 10.
(T / F)

14. The do-while loop guaranteed to execute at least once.

(T / F)

15. The size of union is size of the longest element in the union.

(T / F)

SECTION—B

(Marks : 10)

Answer the following questions :

2×5=10

16. Write any two differences between arrays and structures.

17. Differentiate between counter-controlled loops and sentinel-controlled loops.

18. Explain briefly the relationship between pointers and arrays.

19. Write any two rules for creating identifiers or variables.

20. Differentiate between actual arguments and formal arguments.

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) Define variable. Write any three rules for creating variables in C programming. 2+3=5

(b) What is data type? Explain briefly the three classes of data types. 2+3=5

OR

(c) Explain briefly any three output codes for printf () and any three input codes for scanf () functions. 3+3=6

(d) Explain briefly the difference between pre and post in ++ and -- operators with examples. 2+2=4

2. (a) Differentiate between while loop and do-while loop with examples. 2+2=4

(b) Explain the structure of FOR loop. Write the sum of first 100 natural numbers using FOR loop. 2+4=6

OR

- (c) Write the flowchart of nested if...else statement. 5
- (d) Write a C program that exchanges the values between two variables, without using third variable. 5
3. (a) Explain in brief the four storage classes in C. 4
- (b) Write C program to demonstrate linear search in single-dimensional array. 6

OR

- (c) Differentiate between the functions 'call by value' and 'call by reference' with example codes. $3+3=6$
- (d) What are the differences between one-dimensional arrays and multidimensional arrays? 4
4. (a) Explain the declaration and initialization of a string variable. 4
- (b) Is it possible to make a pointer-to-point to another pointer? Explain with prove your answer with an example. 6

OR

- (c) Write any four benefits of using pointers in C. 4
- (d) Write the syntax and explain with example any three string handling functions from the following : 6
- (i) strcat()
- (ii) strcmp()
- (iii) strcpy()
5. (a) Write the syntax of structures and unions. What is the major distinction between structures and unions? $3+1=4$
- (b) What is structure within structure? Write C program to demonstrate structure within structure. 6

OR

- (c) Write the syntax and explain with example the uses of fopen() and fclose() file functions. 4
- (d) Define a structure type, struct student, that would contain student name, date of birth and roll number. Using this structure, write a program to read this information for one student from the keyboard and print all the informations in the screen. 6

★ ★ ★