BCA-103

INTRODUCTION TO PROGRAMMING

Time Allotted: 3 Hours | Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP A
(Multiple Choice Type Questions)

1. Answer all questions. $10 \times 1 = 10$

(i) What is the range of "real constants" in 'C'?

(A) –3.8 ×10 38 to 3.8 × 10 38 (B) –34E37 to 34E37
(C) –6.4 × 10 34 to 6.4 ×10 34 (D) –68E33 to 68E33

(ii) What will be the output of the following statement?

/*/*printf("hello");*/*/

(A) hello (B) no output
(C) error (D) "hello"

(iii) What will be the output of the following statement?

printf("%i" ,35,2 + 8*5% 10–2);

(A) error (B) 0
(C) 35 (D) 350

(iv) What will be the output of the following statements?

int a= printf("00");printf("%d",a);

(A) 0 (B) 00
(C) 002 (D) garbage value

(v) What will be the output of the following statement?

int a = 4, b = 7, c; c = a = = b; printf("%i",c);

(A) 0 (B) error

(C) 1 (D) garbage value

(vi) What will be the output of the following program?

#include<stdio.h>

int a = 10;

void main()

{ int a = 50; printf("%d",a);}

(A) 50 (B) error

(C) 10 (D) garbage value

(vii) In which header file is the NULL macro defined?

(A) stdio.h (B) stddef.h

(C) stdio.h and stddef.h (D) math.h

(viii) The tool used to convert a "C" program to machine language is called as

(A) linker (B) language translator

(C) compiler (D) preprocessor

(ix) C programming language is a/an

(A) object oriented programming language

(B) procedure oriented programming language

(C) function oriented programming language

(D) none of these

(x) Which of the following is a keyword

(A) main() (B) signed

(C) integer (D) floating

GROUP B
(Short Answer Type Questions)

Answer any *three* questions. 3×5 = 15

2. Explain the difference between 'call by reference' and 'call by value' with example.

3. What do you mean by recursion? Write a recursive function called power ( ) to calculate x rise to the power n. 2+3

4. Compare array and linked list.

5. Write a program to print the sum of the following series of n terms:
S= 1 + (1+2) + (1+2+3) +.....

6. Use a structure to define complex numbers and write a program in "C" to add two complex numbers.

GROUP C
(Long Answer Type Questions)

Answer any *three* questions. 3×15 = 45

7. Briefly describe the different loop control structures in 'C' with syntax, example and explanation. What is the difference between local variable and global variable. Write a recursive function for ${}^{n}P_{r}$ calculation. 5+3+7

8. Explain with examples the meaning of explicit and implicit type casting. Write a note on logical operators available in C. Write a program to check the number is prime or not. 5+5+5

9. What do you mean by storage classes in 'C'? Name different storage classes and explain each with examples. Write a 'C' program that implements the matrix transpose using 2-D array. 3+4+8

10. What is union? What is switch case. Explain with example. Describe different types of data types. Write a 'C' program to print the Fibonacci sequence of n numbers. 2+2+5+6

11. Write short notes on any *three* of the following: 3×5
   (a) getc() and getchar() function.
   (b) Go and continue.
   (c) Auto and extern.
   (d) Actual and formal arguments.