MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : BCAN-103

PUID : 01099 (To be mentioned in the main answer script)

C PROGRAMMING

Time Allotted : 3 Hours   Full Marks : 70

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. Choose the correct alternatives for any *ten* of the following :   10 × 1 = 10

   i)   The printf() is included under which header file ?
       a) stdio.h   b) conio.h
       c) both (a) and (b)   d) none of these.

   ii) What is the highest positive number that can be stored in 'signed int' data type ?
       a) 32767   b) 32768
       c) 65536   d) 2147483647.

   iii) Storage class specifier of default type is
       a) automatic   b) internal
       c) default   d) auto.

   iv) C language uses .... for code translation.
       a) interpreter   b) compiler
       c) assembler   d) both (a) and (c).

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v) # statements are .... directive.

    a) Operating System   b) Compiler

    c) CPU   d) Program.

vi) How would you round off a value from 1·66 to 2·0 ?

    a) Ceil (1·66)   c) Roundup (1·66)

    b) Floor (1·66)   d) Roundto (1·66).

vii) What is the output of the following program ?

```
#include<stdio.h>
main()
{
char s1[50], s2[50] = "Hello";
s1 = s2;
printf("%s", s1);
}
```

    a) Hello   b) No output

    c) Compile error   d) Runtime error.

viii) Which header statement is missing in the given below program to get the desired output ?

```
#include<stdio.h>
int main ()
{
double x = 1234321;
double result = sqrt(x);
printf("The  square  root  of  %.2lf  is
%.2lf\n", x, result);
return 0;
}
```

    a) #include<defs.h>

    b) #include<math.h>

    c) include<stdlib.h>

    d) Above program is absolutely correct to give desired result.

ix) Which of the following operators can be used to access value at address stored in a pointer variable ?

    a)   *   b)   #

    c)   &&   d)   @.

x) The library function strrchr() finds the first occurrence of a substring in another string.

    a)   Yes   b)   strchr()

    c)   strstr()   d)   strnset().

xi) fprintf() command is used for

    a)   output into file

    b)   output in console

    c)   output into file as well as console

    d)   not used for output purpose.

xii) C language supports

    a)   call by value   b)   call by reference

    c)   call by name   d)   none of these.

GROUP – B
(Short Answer Type Questions)
Answer any *three* of the following.   3 × 5 = 15

2. Differentiate between structure and union with example. What is the purpose of sizeof() ?   4 + 1

3. Write a C program to check a number is prime number or not.

4. Write a C program to reverse given number.

5. Write a C program to swap two numbers without using third variable.

6. Write a C program to find and display the transpose of the matrix below without using any auxiliary space.

$$\begin{bmatrix} 1 & 2 & 4 \\ 2 & 2 & 3 \\ 7 & 9 & 1 \end{bmatrix}$$

GROUP – C
(Long Answer Type Questions)
Answer any *three* of the following.   3 × 15 = 45

7. Write a program for matrix multiplication.

8. a) Write a program to add roll, grade and marks of 3 subjects for 5 students.   7

    b) Write down compilation steps of a C program. What is scope of a variable ?   6 + 2

9. a) Write a C program to add two 2-dimensional arrays. Please note that the size of the arrays may be inputted by the user. https://www.makaut.com   10

    b) Write a program to verify if a given character string is palindrome or not. Please note that a palindrome means that the strings and its reverse are identical.   5

10. Write short notes on any *three* of the following :   3 × 5

    a) Header file

    b) Function

    c) if-else

    d) Increment and decrement operators.

11. a) What is the difference between struct and array ? Provide examples.   4 + 2

    b) Write a C program to read the records of 10 students maintained in a file in which each record contain the following fields.

Name	Roll Number	Age	Father's Name	% of marks in last examination

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