



**MAULANA ABUL KALAM AZAD UNIVERSITY OF  
TECHNOLOGY, WEST BENGAL**

**Paper Code : BCAN-103**

**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 alternative for *any ten* of the following: 1×10=10
- (i) Identify the erroneous expression:
    - (a) `a = b = 2,4;`
    - (b) `num = ++a * 5;`
    - (c) `num *= 4;`
    - (d) `num = a++ - b * 2;`
  - (ii) The default return type of any C function is
    - (a) a character value
    - (b) a decimal value
    - (c) an integer value
    - (d) void
  - (iii) Which statement is used to terminate the execution of the nearest enclosing loop in which it appears?
    - (a) Break
    - (b) Continue
    - (c) Default
    - (d) Case
  - (iv) "Interest rate is decreased by 2%". Select the statement below, which will display the same:
    - (a) `printf("Interest rate is decreased by 2\%");`
    - (b) `printf("Interest rate is decreased by 2'%");`
    - (c) `printf("Interest rate is decreased by 2%%");`
    - (d) `printf("Interest rate is decreased by 2%");`

CS/BCAN/Odd/SEM-1/BCAN-103(New)/2018-19

- (v) Given an integer array, arr[], the  $i^{\text{th}}$  element can be accessed by writing
- (a) (arr + i)
  - (b) \*(i + arr)
  - (c) arr[i]
  - (d) All of these
- (vi) The operator \* operating in unary mode signifies a
- (a) Referencing operator
  - (b) Dereferencing operator
  - (c) Address operator
  - (d) None of these
- (vii) A structure member variable is generally accessed using the
- (a) address operator
  - (b) dot operator
  - (c) comma operator
  - (d) None of these
- (viii) The variable retains its value in-between function calls is \_\_\_\_\_
- (a) auto
  - (b) static
  - (c) register
  - (d) extern
- (ix) void main() {  
    int a=0, b=1, c=2, x;  
    x=a++||b++||c++;  
    printf("%d%d%d%d", x, a, b, c);  
(a) 1123  
(b) 1012  
(c) 1112  
(d) None of these
- (x) Find the output:  
int main()  
{ int a=9; char ch='A';  
  a = a + ch + 24;  
  printf("\t%d \t%d \t%c", ch, a, a);  
  return 0;  
}  
(a) 65 98 b  
(b) 66 65 a  
(c) error  
(d) None of these
- (xi) The preprocessor directives must be preceded by which symbol?
- (a) \*
  - (b) &
  - (c) @
  - (d) #

**Group – B**

**(Short Answer Type Questions)**

Answer any three of the following.

5×3=15

2. What is the difference between break and continue? What is ternary operator? What is a keyword? 2+2+1=5
3. Draw a flowchart to check whether a user given number is palindrome or not. 5
4. Write a C program to add the following series:  
 $1 + 2/2! + 3/3! + 4/4! + \text{_____} + n/n!$ , where value of  $n$  is given by user. 5
5. What do you mean by scope of a variable? Explain the different storage classes available in C. 1+4=5
6. Write a C program to convert a binary number to its equivalent decimal number. 5

**Group – C**

**(Long Answer Type Questions)**

Answer any three of the following.

15×3=45

7.
  - (a) Explain the difference between "call by value" and "call by reference" with example.
  - (b) What are the advantages of using functions in C programming? What is the difference between user-defined functions & library functions? <http://www.makaut.com>
  - (c) What is the difference between recursion and iteration?
  - (d) Write a program to check whether the number given by the user is a Krishna Murthy number or not.  
Krishna Murthy Number: It is a number which is equal to the sum of the factorials of all its digits.  
For example:  $145 = 1! + 4! + 5! = 1 + 24 + 120 = 145$   $4+(2+1)+2+6=15$
8.
  - (a) Differentiate between while loop and do-while loop.
  - (b) What is switch-case? What are the advantages of switch-case?
  - (c) Differentiate between `getc()` and `getchar()` function.
  - (d) Write a C program to print the sum of the following series of  $n$  terms:  
 $1 + (1+2) + (1+2+3) + \text{_____}$   $3+(2+2)+3+5=15$
9.
  - (a) What is string in C? Explain with example.
  - (b) Write a C program to reverse a string given as user input.
  - (c) What are local variable and global variable?
  - (d) What is a pointer?
  - (e) Write a recursive function for GCD calculation.

*CS/BCAN/Odd/SEM-1/BCAN-103(New)/2018-19*

10. Define Structure and Union. How does union differ from structure? How can you access the member of these types? Discuss with an example. Write a function that will scan a character string passed as an argument and convert all lowercase characters into their uppercase equivalents. 3+3+3+6=15
11. Write short notes on *any three* of the following: 5×3=15
- (a) malloc() and calloc()
  - (b) Actual and Formal arguments
  - (c) strcpy(), strcat(), strcmp() and strcmp() functions
  - (d) Function declaration, function definition, function calling
  - (e) Macro in C language
- 

<http://www.makaut.com>  
Whatsapp @ 9300930012  
Your old paper & get 10/-  
पुराने पेपर्स भेजे और 10 रुपये पायें,  
Paytm or Google Pay से