



# MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : BCAC 101 Programming for Problem Solving

UPID : 100046

Time Allotted : 3 Hours

Full Marks :70

The Figures in the margin indicate full marks.

Candidate are required to give their answers in their own words as far as practicable

## Group-A (Very Short Answer Type Question)

1. Answer any ten of the following :

[ 1 x 10 = 10 ]

- (i) The list should be sorted in some order is the pre-condition for which search technique?
- (ii) In C, a union variable is memory location. (True/ False)
- (iii) What is the value of  $7\%3$ ?
- (iv) The equality operator is represented by \_\_\_\_\_ .
- (v) A function can't return a pointer to the caller. (True/ False)
- (vi) Which key word is used to break out from the case statements?
- (vii) The C program is converted into machine languages with the help of \_\_\_\_\_ .
- (viii) Which character can be used to begin a new line in C?
- (ix) Maximum number of elements in the array declaration `int a[5][8]` is 40.(True/ False)
- (x) C Library functions provide I/O facilities. (True/ False)
- (xi) Is the following statement a valid declaration in C? (True/ False) `extern int i;`
- (xii) The operator `&` is used for Bitwise AND. (True/ False)

## Group-B (Short Answer Type Question)

Answer any three of the following

[ 5 x 3 = 15 ]

2. What are the key features in the C programming language? [ 5 ]
3. What is the use of `printf()` and `scanf()` functions? [ 5 ]
4. What is difference between `void main()` and `int main()`? [ 5 ]
5. What is the use of function in C? [ 5 ]
6. What are the differences between the local variable and global variable in C? [ 5 ]

## Group-C (Long Answer Type Question)

Answer any three of the following

[ 15 x 3 = 45 ]

7. (a) Write a C program to find sum of series of the following series for n number of terms.  $1+x+x^2+\dots+x^n$  [ 7 ]  
 (b) What is switch case in c? Explain with example. [ 8 ]
8. (a) What is a function pointer? Explain with example. [ 8 ]  
 (b) Difference between Entry controlled and Exit controlled loop? [ 7 ]
9. (a) Write a program in C to make such a pattern like a pyramid for n number of lines, where n is taken from user as input. [ 5 ]  

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      *
     **
    ***
   ****
      
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- (b) Write a C program to calculate the factorial of a given number [ 5 ]
- (c) What is a built-in function in C? [ 5 ]
10. (a) What are the advantages & disadvantages of using pointers in C? [ 5 ]  
 (b) What is a null pointer? [ 5 ]

(c) What is void\* (void pointer)?

[5]

11. Define a structure type struct personal that would contain person name, date of joining and salary as members. Now, use this structure to read information of n (taken as input) number of persons and print the same on screen.

[15]

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