

QUESTION BANK

BCA Ist Semester

BCA-T112: Programming Concepts using 'C'

1. What do you understand by constant, variable and keywords? Discuss the scope of a variable.
2. Describe the main features of C language with examples.
3. Is C a low-level or high-level language? Explain your answer.
4. Explain the terms flowchart and algorithm with examples.
5. Discuss the basic structure of a 'C' program.
6. Name and describe the various datatypes available in C.
7. Can multiple assignments be written in C. In what order will the assignment be carried out.
8. Explain nested if – else with example.
9. What are the different decision control structure available in C. Explain with examples.
10. What do you understand by operators? Explain the use of the following operators :
 - a) relational
 - b) logical AND
 - c) arithmetic operators.
11. Discuss the conditional operator with the help of a program.
12. Discuss Precedence order and associativity of operators.
13. What is typecasting? When should a typecast be used ?
14. What is the purpose of main() function? Can we have a program without main().
15. What the term 'Nesting' refers to? Explain with the help of an example.
16. What are the various loop constructs available in C. Distinguish between while and do- while loops.
17. Why do we avoid the use of goto statements in programs?
18. If a 5 digit number is input through the keyboard, write a program to print the sum.
19. A cashier has currency notes of denominations 10, 50 and 100. If the amount to be withdrawn is input through the keyboard, find the total number of currency notes of each denomination the cashier will have to give the withdrawer.
20. If a four digit number is input through the keyboard, write a program to find the sum of first and last digit.
21. Differentiate between break and continue with examples.
22. What are functions? What is the advantage of using function in a program?
23. What are macros? Is it better to use a macro or a function?
24. In header files whether functions are declared or defined?
25. Explain call by value and call by reference with examples.
26. How can we swap two variables without using a temporary variable?
27. What do you understand by recursion? Explain with example.
28. Write a program in C to find the factorial of a number.
29. Write a program in C to find out the value of factorials from 1 to 10 using recursion.
30. What is an array? Explain the features of an array and their uses.
31. In what ways does an array differ from an ordinary variable? What advantage is there in defining an array size in terms of symbolic constant rather than a fixed integer constant?
32. Explain the concepts of multidimensional arrays in 'C' Language.

33. Can an array be used as an argument to a function? If yes, explain with examples.
34. What do you understand by multi dimensional arrays.
35. Explain the various storage classes in C.
36. What are register variables? What are the advantage of using register variables?
37. a) Find the output for the following C program

```
i=20,k=0;
for(j=1;j<i;j=1+4*(i/j))
{
k+=j<10?4:3;
}
printf("%d", k);
```

- b) Find the output for the following C program

```
int i =10
main()
{
int i =20,n;
for(n=0;n<=i;)
{
int i=10;
i++;
}
printf("%d", i);
```

- c) Find the output for the following C program

```
main()
{
int x,j,k;
j=k=6;x=2;
x=j*k;
printf("%d", x);
}
```

38. What do you understand by pointers? Give the syntax of declaration of a pointer.
39. Find the output of the following program

```
main()
{
int x=5, *p;
p=&x;
printf("%d",++*p);
}
```

40. How do you use a pointer to a function?
41. Discuss the various arithmetic operations performed on a pointer.
42. What is a null pointer?
43. Find the output for the following C program

```
i=20,k=0;
for(j=1;j<i;j=1+4*(i/j))
{k+=j<10?4:3;
}
printf("%d", k);
```

44. Find the output for the following C program

```
main()
{intx=2,y=6,z=6;
 x=y=z;
 printf("%d",x)
}
```

45. What is printed when this program is executed

```
main()
{
 printf ("%d\n",f(7));
}
f(X)
{
 if ( <= 4)
 return x;
 return f(--x);
}
```

47. What does the following function print?

```
func(int i)
{
 if(i%2)return 0;
 else return 1;
}
main()
{
 int =3;
 i=func(i);
 i=func(i);
 printf("%d",i);}
}
```

48. What does the following code do?

```
fn(int n,int p,int r)
{
 static int a=p;
 switch(n)
 {
 case 4:a+=a*r;
 case 3:a+=a*r;
 case 2:a+=a*r;
 case 1:a+=a*r;
 }
}
```

49. Consider the following program

```
main()
{
    unsigned int i=10;
    while(i>=0){
        printf("%u",i)
        i--;
    }
}
```

how many times the loop will be executed ?

50. What does the function return

```
int fun()
{
    i=3;
    i=6;
    if(i=6)
        i=7;
    return i;
}
```

50. What is the output of the following code ?

```
int main ()
{
    int i = -1 ; j = 1 , k = 0 , m ;
    m = i++ || j++ && k++
;
    printf ("\n\n%d %d %d " , i , j , k , m ) ;
}
```

51. Write a program for the addition of a 2*2 matrix?

52. Write a program to multiply two 3*3 matrix.

53. Write a program to pick up the largest number from any 5*5 matrix.

54. Write a program to find out the transpose of a matrix.

55. What is difference between Structure and Unions?

56. What are macros? what are its advantages and disadvantages?

57. What is a NULL Macro? What is the difference between a NULL Pointer and a NULL Macro?

58. What is the difference between Extern and Global variable?

59. What are the differences between structures and arrays?

60. What is a structure? Explain the advantages of using a structure.

61. What do you understand by strings? How do you declare a string?
62. Write a program to copy one string into another.
63. Explain the functions of the following :
- a) Strcpy ()
 - b) Strlen ()
 - c) Strcat ()
64. Can an array of pointers to string be used to collect strings from the keyboard? Justify your answer.
65. Create a program that receives the month and year from the keyboard as integers and prints the calendars.
66. Explain the various uses of a structure.
67. Write a program to count the number of words in a given text file.
68. Write a program to remove all blank lines from a file.
69. What is the purpose of the library function fflush()?
70. Write a program that prints only those lines from a file which are containing more than 80 characters.
71. Differentiate between calloc() and malloc().
72. There are 100 records present in a file with the following structure :
- ```
Struct
{
 Char itemcode[6], itemname[20];
 Int qty;
};
```
- Write a program to read these records, arrange them in ascending order and write them to a target file.
73. Differentiate between getch( ) and getche ( ).
74. Discuss the functions of fscanf( ), fprintf( ) and fseek( ).
75. Explain argc and argv.