

I Semester B.C.A. Degree Examination, November/December 2018
 (CBCS) (F+R) (2014 – 15 & Onwards)
COMPUTER SCIENCE
BCA-103T : Problem Solving Techniques using C

Time : 3 Hours

Max. Marks : 70

Instruction : Answer all Sections.

SECTION – A

I. Answer any 10 questions.

(10×2=20)

- 1) Who developed C programming ? Write down the default value of char datatype.
- 2) Define an algorithm. Write down any two disadvantages of an algorithm.
- 3) What is qualifier ? List the qualifiers applied to the primitive datatypes.
- 4) What is the output of following code :


```
# define mul (a, b) a*b
void main ()
{
    int x = 5, y = 3, r;
    r = mul(x + y, x - y);
    printf(" r = % d", r);
}
```
- 5) Differentiate between break and exit statements.
- 6) Explain ternary operator with an example.
- 7) Write down any two disadvantages of an array.
- 8) Explain function prototype.
- 9) What is the difference between gets () and scanf() input functions ?
- 10) Define implicit and explicit type casting.
- 11) Define structure and union.
- 12) What is use of malloc() and calloc() functions ?



SECTION – B

II. Answer **any 5** questions.**(5×10=50)**

- 13) a) Explain characteristics of C. 5
b) Develop an algorithm to find smallest of three numbers. 5
- 14) a) If $x = 50$ and $y = 20$ then perform :
i) $x \& y$ ii) $x|y$ and iii) $x \wedge y$ 5
b) Explain unformatted I/O functions. 5
- 15) a) Write a program to demonstrate call by value and call by reference. 5
b) Explain while and do-while control structures. 5
- 16) a) If `city [] = "BENGALURU"` then write the output using following functions :
i) `printf("%s", city);`
ii) `printf("%5s", city);`
iii) `printf("%10.6s", city);`
iv) `printf("% - 10.6s", city);`
v) `printf("%10.0s", city);` 5
b) Write a program to calculate
$$NCR = N!/R!*(N - R)!$$
 using function. 5
- 17) a) Write a program to demonstrate structure. 5
b) Write a note on storage classes. 5
- 18) a) What is macro ? Explain macro definition with example. 5
b) Explain any five string operations with example. 5
- 19) a) Write a program to display fibonacci series using recursive function. 5
b) Write a program to copy contents of a file into another. 5
- 20) a) Write a program to concatenate two strings using pointers. 5
b) Explain file access methods in C. 5