Roll No……..….. **Total No. of Printed Pages: 2**
Total No. of Questions: [09]

B. Tech. (All Branches) (Semester – 1st /2nd)
PROGRAMMING FOR PROBLEM SOLVING
Subject Code: BCSCE0101
Paper ID: [19110017]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a. Write difference between algorithm and flowchart.
b. What is format specifier? Define keyword, constant and variable.
c. Distinguish between while and do-while statements.
d. Write a short note on type casting.
e. Explain the following preprocessor directives: #include and #define.
f. Why do we use header files?
g. What is a function? Write the types of functions.
h. What are the Different file operations?
i. What is meant by call-by value and call-by reference?
j. Define pointer. How can you declare it?

Section – B **(5 marks each)**

Q2. What is recursion? How do you print a fibonacci sequence using recursion?

Q3. Discuss about the following operators in C language with example.

a. Bitwise operators
b. Increment and decrement operators
c. Logical operators

Q4. Distinguish between the following:

a. Actual and formal arguments
b. Global and local variables
c. Automatic and static variables

Q5. Write a C program to read and print an array of elements using pointers.

Q6. Explain the following file handling functions:

a. fseek()
b. ftell()
c. rewind()
d. feof()

Section – C **(10 marks each)**

Q7. Write the structure of C program and explain. Also, write a program to perform swapping of two numbers without using temporary variable.

Q8. What is a nested loop? Write a program to display the following pattern.

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Q9. Explain the following string handling functions with example:

a. strcpy()
b. strcmp()
c. strcat()
d.strlen()
e. strncat()