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Total No. of Printed Pages: 2

Total No. of Questions: [09]

B. Tech. (Civil Engg.) (Semester – 1st /2nd)
PROGRAMMING FOR PROBLEM SOLVING

Subject Code: BCSCE0101

Paper ID: [18110707]

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.

```
*****
*****
***
**
*
```

Q9. Explain the following string handling functions with example:

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