



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 199239

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15 COMPUTER PROGRAMMING

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (1) Attempt all questions.
 - (2) Make suitable assumptions wherever necessary.

SECTION-A

1. Attempt all parts of this question. **2x10=20**

- (a) Explain the functions of a linker.
- (b) What is the role of curly braces ({}) in C program.
- (c) What will be the output of the following program?

```
void main()
{
    int i=1, j=2, k=3;
    clrscr();
    printf(“%d”,!(j+k)>(i+5) );
}
```

- (d) What is sizeof () operator? Explain with suitable example.

- (e) Differentiate between “%f” and “%g”.
- (f) What are the limitations of switch () case statement?
- (g) Why does element counting of arrays always start from ‘0’?
- (h) Name the types of storage classes.
- (i) What do you mean by system software?
- (j) Differentiate between sequential search and binary search.

SECTION-B

2. Attempt any three of the following. 10×3=30

- (a) (i) What is a flow chart? Draw the flow chart for finding the greatest element in an array.
- (ii) Convert the following;
 - 1) $(1100101)_2 = ()_{10}$
 - 2) $(A2F)_{16} = ()_2$
 - 3) $(23.72)_{10} = ()_2$
 - 4) $(264)_8 = ()_2$
 - 5) $(231)_4 = ()_2$
- (b) What are the nested loops in C? Write a program in C to find the perfect cubes up to given number. As 18,27,64 are perfect cubes of 1,2,3,4, respectively.

- (c) What is a pointer? Write the advantages and disadvantages of it. Explain with suitable example how pointers are declared in C programming.
- (d) How are the multidimensional arrays declared in C programming? Write a program in C to multiply two $m \times n$ matrices.
- (e) What are the different loop statements supported by C language? Write a program in C to generate the following pattern using for loop and while loop.

```
1
1 2
1 2 3
1 2 3 4
```

SECTION-C

3 Attempt any two of the following. **2x5=10**

- (a) What is digital computer ? How is it different from analog computer ? Classify the various digital computers.
- (b) Differentiate between:
 - (i) SRAM and DRAM
 - (ii) CD-R and CD-RW
- (c) What are the various approaches to problem solving? Explain any one of them.

- 4 Attempt any two of the following. **2x5=10**
- (a) Explain comma and conditional operator in C language with suitable examples.
 - (b) Name different categories of constants in C language.
 - (c) Write a program in C to check whether a given string is palindrome or not?
- 5 Attempt any two of the following. **2x5=10**
- (a) Define the structure and union in C. List the advantages and disadvantages of each.
 - (b) Discuss the various parameters passing mechanism used in function in C language.
 - (c) What is a string? Write a function in C to find the length of string without using strlen().
- 6 Attempt any one of the following. **1x10=10**
- (a) What types of files can be created in C for storing the data? Write a program in C to create and then store the first 30 odd integers in it.
 - (b) What are array of pointers? How they are declared and initialised? Using pointers write a program to read and display list of names of students.
- 7 Write short notes on any two of the following. **2x5=10**
- (a) Operating system
 - (b) Defining and calling macros with proper example.
 - (c) Global variables