R16

SET - 1

I B. Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018
COMPUTER PROGRAMMING
(Com. to CE,EEE,ME,CSE,ECE,IT,EIE,ECom E,Aero E,Auto E,Bio-Tech,Chem E,Metal E, Min E, PChem E, PE)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is Compulsory
3. Answer any **FOUR** Questions from **Part-B**
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PART –A

1. a) What are the essential steps in the development an algorithm? (2M)

   b) What is the need of commenting a statement in language? What are the different ways of commenting the statements in C language? (2M)

   c) Give the differences between entry controlled and exit controlled loops. (2M)

   d) Define scope and life time of a variable. (2M)

   e) What are the need arrays in C programming? (2M)

   f) What is dangling pointer? (2M)

   g) What are the advantages with bit fields? (2M)

PART –B

2. a) Explain the features of Procedural Oriented and Object Oriented Languages. (7M)

   b) Give a comparison between system and application softwares with examples. (7M)

3. a) What is the need of format specifier? Write a sample program to illustrate any five format specifiers. (7M)

   b) What is type casting? Name the inbuilt typecasting functions available in C language. What is the difference between type casting and type conversion? (7M)

4. a) Write program to check whether the given integer is palindrome or not. (7M)

   b) Write about nested for loop statement with examples. (7M)

5. a) Explain different storage classes with example. (7M)

   b) Write a C program to find the arithmetic mean of n values using functions. (7M)

6. a) Illustrate different ways of declaring and initializing arrays and string variables. (7M)

   b) Write a program to find second highest and smallest number in the given array. (7M)

7. a) How to initialize and access pointer variable? Explain pointer to a function with example. (7M)

   b) Is it possible to nest the structure? Explain with example. (7M)

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PART –A

1. a) List different components of computer hardware.   (2M)

    b) What is meant by casting operation? What are its uses?   (2M)

    c) What are the limitations of if-else loop statement?   (2M)

    d) What is the difference between function declaration and function definition in C.   (2M)

    e) What is the difference between ordinary variable and array variable?   (2M)

    f) What is a null pointer? What is its use?   (2M)

    g) Distinguish between text mode and binary mode operation of a file.   (2M)

PART –B

2. a) Develop a flowchart for calculating area of a equilateral triangle. Area of   (7M)
    equilateral triangle is computed by formula $A = \dfrac{\sqrt{3}}{4} a^2$, where 'a' is length of side
    of triangle.

    b) Explain features, merits and demerits of assembly language.   (7M)

3. a) Explain different data types supported by C language with their memory   (7M)
    requirements.

    b) Write C program to check whether the given number is even or odd without using   (7M)
    % (modulus) operator.

4. a) What are selection statements? What is the necessity of selection statements?   (7M)
    Explain.

    b) Differentiate the conditional operator with if else statement. Explain with the help   (7M)
    of an example.

5. a) Discuss about call by reference and call by value with an example.   (7M)

    b) What is a function? What are the uses of functions? Discuss the rules followed to   (7M)
    call a function.

6. a) Explain the following string handling functions: (i) strcpy( ) (ii) strlen( ) (iii)   (7M)
    strcat( ) (iv) strcmp( ).

    b) Write a C program to multiply two 2-dimensional arrays.   (7M)

7. a) Define a structure. Describe how to declare and initialize structure and its   (7M)
    members with an example.

    b) Explain about the fopen, fclose, feof, fprintf, fscanf, fseek and rewind functions.   (7M)

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PART –A

1. a) What are the essential steps of software development process?   (2M)

    b) Define an identifier. Write rules for naming identifiers.   (2M)

    c) Distinguish between break and continue statements used in C programming.   (2M)

    d) What is the difference between local and global variables?   (2M)

    e) Why it is necessary to count NULL character while declaring a string?   (2M)

    f) What is a self referential structure?   (2M)

    g) What is a data file? Different categories of data files.   (2M)

PART -B

2. Explain the features following: (14M)
    (i) Machine language (ii) Low level language (iii) High level language

3. a) Discuss about operator precedence in expression evaluation with a suitable   (7M)
    example.

    b) What is the need of escape sequence? Write a sample program to illustrate escape   (7M)
    sequences.

4. a) Write a program to read the value of x and evaluate the following function.   (7M)

$$Y = \begin{cases} 1 & for\ x > 0 \\ 0 & for\ x = 0 \\ -1 & for\ x < 0 \end{cases}$$

    Using else if statement and nested if statement.

    b) How does a switch statement works? List the difference between switch and if else (7M)
    ladder statement.

5. a) What is recursive function? In what way recursive function is different from   (7M)
    iteration. Explain with an example.

    b) What is the scope of variables of type extern, auto, register and static? Explain   (7M)
    with example.

6. a) Explain different string manipulation functions with example.   (7M)

    b) Write a C program to calculate the sum and difference of two 2-dimensional   (7M)
    matrices.

7. a) Explain the arithmetic operations on pointers with example.   (7M)

    b) Write a C program to count the number of words in a file.   (7M)

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PART –A

1. a) What is the difference between hardware and software? (2M)

    b) What is the use of mathematical library functions in C language? (2M)

    c) In which ways does a switch statement differs from an if statement. (2M)

    d) What are the advantages and disadvantages with recursion? (2M)

    e) What is the difference between NULL, '\0' and 0? (2M)

    f) Differentiate between structure and union. (2M)

    g) Write different dynamic memory management functions with their usage. (2M)

PART -B

2. a) What is a programming language? Why C language is called as Middle level programming language? Explain. (7M)

    b) Give the block diagram of a computer. Explain functionality of each component. (7M)

3. a) Explain different types of operators available in C language with examples. (7M)

    b) Write a program to print all integers which are divisible by 7 between 100 and 200. (7M)

4. a) Write a C program to calculate m^n value using while and do while loop. (7M)

    b) Explain counter-controlled and condition-controlled loops with examples. (7M)

5. a) What is user defined functions? Write a program to swap two numbers using pointers. (7M)

    b) Explain about calling function, called function and actual and formal arguments. (7M)

6. a) Explain how arrays are passed as function arguments with an example. (7M)

    b) Write a program to enter some text through keyboard. Insert a **dot** (.) after every three words in the text. The first character after every dot should be converted to capital. (7M)

7. a) Explain how to access the elements of a union with an example. (7M)

    b) Write a C program that reads contents of a file and displays then in capital letters if they are alphabets. (7M)