

Code No: R10105/R10

Set No. 1**I B.Tech I Semester Regular Examinations, February 2013****C PROGRAMMING**

(Common to Civil Engineering, Electrical & Electronics Engineering,
 Mechanical Engineering, Electronics & Communication Engineering,
 Computer Science & Engineering, Chemical Engineering, Electronics &
 Instrumentation Engineering, Bio-Medical Engineering, Information
 Technology, Electronics & Computer Engineering, Aeronautical
 Engineering, Bio-Technology, Automobile Engineering, Mining and
 Petroleum Technology)

Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is an expression in C? Explain about various types of expressions in C.
 (b) Give C notation for the following mathematical expressions

$$(i) 1 + \frac{nx}{1} + \frac{n(n-1)x^2}{2} + \frac{n(n-1)(n-2)x^3}{2} \quad (ii) \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad [8+7]$$
2. (a) What is null? Justify your answer with an example
 (b) Write a C program to find the biggest of 3 numbers [8+7]
3. (a) Write C program to evaluate the Sin function $\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$
 (b) Write C Program to evaluate Cos Function $\cos(X) = 1 - \frac{X^2}{2!} + \frac{X^4}{4!} - \frac{X^6}{6!} + \dots$ [8+7]
4. Can an array be passed from a function to the calling portion of a program via return statement? Explain [15]
5. (a) Explain in detail about various 'MATH' – Functions with C – Programs as examples.
 (b) Write in detail about 'Tips and Common Programming Errors' in Functions with examples. [8+7]
6. (a) Explain the concept of Dynamic Storage and Arrays.
 (b) Write a C Program to implement Dynamic Storage of One – Dimensional arrays i.e., to read the elements and Print the elements. [7+8]
7. (a) Differentiate between self referential and nested structures with an example.
 (b) What is the difference between array of structures and structures containing arrays with suitable examples [7+8]
8. Write a program to merge the contents from File A and File B and displays its content in a File C. [15]

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Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
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1. What is Problem Solving? Explain about various Problem Solving Techniques with examples [15]
2. (a) Write syntax for different forms of **if** and **if else** statements.
(b) Write a C program to find the biggest among given 4 numbers (use nested if else). [8+7]
3. (a) Write C program reverse of a given string without `strrev()` function?
(b) Write C program concatenation of given two strings without `strcat()` function? [8+7]
4. (a) Define Multi dimensional array. Explain its usage by writing a program.
(b) Explain the applications of arrays. [8+7]
5. (a) Why we say the life of global variable is retained throughout the program explain.
(b) Write a program to explain function as an argument. [8+7]
6. (a) Write a C program that uses a pointer as a function argument.
(b) Write a C Program using Pointer for string Comparison. [7+8]
7. (a) What is the difference between structures and arrays in C.
(b) Explain the difference between structures and unions [8+7]
8. Write a program to demonstrate
(a) `getc()` and `putc()`
(b) `gets()` and `puts()` [8+7]

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Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

1. What are constants in C? Explain about various constants used in C [15]
2. Differentiate the conditional operator with if else statement. Explain with appropriate examples [15]
3. (a) Write C program to delete all occurrences of vowels in given text?
(b) Write a C program to copy the one string to another string without strcpy() function? [8+7]
4. (a) Write the program to find the sum of N natural numbers using arrays.
(b) Write a program to perform subtraction of two matrices. [6+9]
5. (a) Define Actual Parameters and Formal Parameter. What is meant by Global and Local variable? Explain with an example.
(b) Write a C program to find sum of given series by using Function with argument and return value $e = 2 + 3/1! - 6/2! + 9/3! - 12/4! + \dots$ [7+8]
6. Write a C Program to implement Two Dimensional Array (Matrix) Multiplication using Pointers. Check the condition of Matrix Multiplication. [15]
7. What is nested structure. Give the syntax. Explain with an example [15]
8. Write a program that reads a file and creates a new file with the same data, except reverse the case on the second file. Everywhere uppercase letters appear in the first file, write lower-case letters to the new file, and everywhere lowercase letters appear in the first file, and write uppercase letters to the new file. [15]

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Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is an algorithm? List and explain the properties of algorithm.
(b) List the advantages of algorithm. Write an algorithm to find the average of 3 numbers [8+7]
2. What are bitwise logical operators? Explain about bitwise logical operators with suitable programming example. [15]
3. (a) Suppose a break statement is included within the innermost of several nested control Statements. What happens when break statement is executed?
(b) Write a program to print the multiplication table up to with proper format? [8+7]
4. (a) Write the program to find the sum of N natural numbers using arrays.
(b) Write a program to perform subtraction of two matrices. [6+9]
5. (a) Explain in detail about various 'MATH' – Functions with C – Programs as examples.
(b) Write in detail about 'Tips and Common Programming Errors' in Functions with examples. [8+7]
6. (a) Explain the concept of Dynamic Storage of Character Strings.
(b) Write a C Program to implement Copying a String into another String using Dynamic Storage Concept of Pointers. [7+8]
7. (a) Write the syntax for defining nested structure.
(b) Write a program to read and write employee details using nested structure. [6+9]
8. Suppose a file contains employee's records with each record containing name, designation and salary of an employee. Write a program to read these records and display them in sorted order by name. [15]
