

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: ME305

Course Name: COMPUTER PROGRAMMING & NUMERICAL METHODS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any three full questions, each carries 10marks.

		Marks
1	Explain with the help of an example program how data can be inputted by reading from a file. Add statements in the program to display the numbers read. Also show the contents of the data file to be prepared.	6+2+ 2
2	a) How many bits are used to store a float type C++ data in the computer memory? What is the number of significant digits in a float type data? b) Explain how a float type data is stored in the computer memory.	2+1 7
3	a) What are control statements? Write any four control statements used in C++ b) Write and explain the syntax of “for” loop.	6 4
4	Write a C++ program using do..while statement to print the sum of squares of an array containing “10” values to be declared and initialized. Show how the output of the program is displayed.	8+2

PART B

Answer any three full questions, each carries 10marks.

5	a) List any three advantages of pointers. What is pointer to a one-dimensional array? b) Differentiate between function call by value and function call by reference.	3+3 4
6	Write a C++ program to declare and initialize two matrices. Add statements in this program to find their product.	3+7
7	a) What are friend functions? b) Show using an example code, how a friend function access private members of a class.	4 6
8	Explain public inheritance and private inheritance with suitable examples	10

PART C

Answer any four full questions, each carries 10marks.

9	Solve the following system of equations using an iterative solution technique $8x - 3y + 2z = 20$, $4x + 11y - z = 33$ and $6x + 3y + 12z = 36$. Name the method used	9+1
---	--	-----

- 10 What is a system of linear equation? What is the condition for a unique solution? Name three methods for solving system of equations. Give three points of comparison between direct methods and iterative methods for solving system of linear equations 2+2+3+3
- 11 Mention the use of the following numerical methods/parameters (i) Aitken's methods (ii) Correlation coefficient (iii) finite difference method (iv) least square method and (v) Gauss-Jordan method. 2 mark each
- 12 a) What is correlation? How is it different from regression? 5
b) Name any one measure of correlation. Write down its equation. 5
- 13 Write a C++ program to declare and initialize the pairs of values x and y given by (0,-12), (1,0), (2,0), (3,6) and (4,12). In the same program include statements to interpolate the value of y for x=3.2 using a fourth degree polynomial. 3+7
- 14 Write a C++ program to declare and initialize 10 pairs of values. Add more statements in this program to compute the coefficient of correlation. 3+7
