

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Second Semester B.Tech Degree Regular and Supplementary Examination June 2023 (2019 Scheme)

**Course Code: EST 102****Course Name: PROGRAMMING IN C (Common to all programs)**

Max. Marks: 100

Duration: 3 Hours

**PART A****Answer all Questions. Each question carries 3 Marks**

Marks

- 1 Differentiate among compiler, interpreter and assembler. (3)
- 2 What is a flowchart? Draw the flow chart to check whether the given number is positive or negative. (3)
- 3 Write the difference between 'while' and 'do -while' statements. (3)
- 4 Explain various formatted I/O statements in C. (3)
- 5 What are the different ways of declaring and initialising a single dimensional array? (3)
- 6 Write a C program to check whether the given number is Armstrong or not. (3)  
(A number is Armstrong if the sum of the cubes of the digits equals to the number)
- 7 Define function prototype. Why is it used? Differentiate formal and actual parameters. (3)
- 8 Mention the difference between structure and union using suitable examples. (3)
- 9 What is meant by the scale factor of a pointer variable? Explain using examples. (3)
- 10 List out the various modes of opening a file in C language. (3)

**PART B****Answer any one Question from each module. Each question carries 14 Marks**

- 11 a) Write the algorithm and draw the flow chart to calculate the roots of a quadratic equation, take the coefficients as inputs. (10)
- b) Differentiate between system software and application software. (4)

**OR**

- 12 a) Explain bubble sort algorithm with an example. (10)
- b) Explain different types of memories used in a computer. (4)

- 13 a) Write a menu driven program to find the area of square, triangle, circle and rectangle according to the choice given. (10)
- (b) Differentiate between break and continue statements using an example. (4)

**OR**

- 14 (a) Explain any four types of operators used in C. (7)
- (b) Write a program to generate the following pattern

1

1 2

1 2 3

1 2 3 4

(7)

- 15 a) Implement string concatenation without using built in functions. (8)
- b) Write a C program to accept a 2-D integer matrix and check whether it is symmetric or not ( A matrix 'A' is symmetric if  $A=A^T$ ). (6)

**OR**

- 16 a) Explain any four string handling functions used in C using example. Write the syntax also. (6)
- b) Write a program to print the product of two matrices. (8)
- 17 a) Explain different storage classes used in C by providing suitable examples. (8)
- b) What is meant by recursion? Write a program to find the factorial of a number using recursion. (6)

**OR**

- 18 a) Implement linear search using function. Reading the inputs and printing the result must be done in the main function. (10)
- b) Compare User defined functions with library functions. (4)
- 19 a) Write a program to read and store the details (the name, employee code (integer) and salary) of 'n' employees in a company into a file using structure. Print the details of the employee whose employee code is given as input. (14)

**OR**

- 20 a) What is meant by passing arguments into a function by reference? Write a program to swap two numbers using pass by reference. (8)
- b) Write a program to copy the content of a file to another. (6)

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