

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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
Second Semester B.Tech Degree Examination July 2021 (2019 scheme)

**Course Code: EST102**  
**Course Name: PROGRAMMING IN C**  
**(AN Session)**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all Questions. Each question carries 3 Marks*

- |    |   | Marks |
|----|---|-------|
| 1  | Differentiate between system software and application software.                               | (3)   |
| 2  | Write an algorithm to find the largest of three numbers                                       | (3)   |
| 3  | What is the difference between assignment and equality operators?                             | (3)   |
| 4  | What is a static variable? When should it be used?  | (3)   |
| 5  | Write a C program to find length of a string without using string handling functions.         | (3)   |
| 6  | What is an array? Illustrate using an example, how a single dimensional array is initialised. | (3)   |
| 7  | Differentiate between structure and union using an example.                                   | (3)   |
| 8  | Illustrate the purpose of return statement using an example.                                  | (3)   |
| 9  | Differentiate between char name[] and char *name in C.  | (3)   |
| 10 | Explain the use of fseek() function.  | (3)   |

**PART B**

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

- 11 a) Draw a flowchart to find the factorial of a number. (6)  
b) With the help of a neat diagram explain the functional units of a computer. (8)

**OR**

- 12 a) List five important registers in CPU. Also state the purpose of each register. (6)  
b) Write algorithm and draw flowchart to perform swapping of two numbers. (8)
- 13 a) Explain arithmetic, logical and bitwise operators with examples. (7)  
b) Write a C Program to check if a given number is a strong number or not. A strong number is a number in which the *sum of the factorial of the digits is equal to the number itself.* (7)

Eg:-  $145=1!+4!+5!=1+24+120=145$

**OR**

- 14 a) Write C program to convert the given decimal number into binary number. (7)

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- b) What do you mean by Formatted Input? Explain in detail the prototype of 'scanf()' function in C including its argument list and return type. (7)
- 15 a) Explain any 4 string handling functions in C programming. (7)
- b) Write a C program to perform linear search on an array of numbers (7)

**OR**

- 16 a) Write a C program to find second largest element in an array. (7)
- b) Write a C program to check whether a string is palindrome or not without using string handling functions. (7)
- 17 a) What are different storage classes in C? Give examples for each. (7)
- b) Write a C program to:
- (i) Create a structure with fields: Name, Address, Date of birth. (7)
- (ii) Read the above details for five students from user and display the details

**OR**

- 18 a) What is recursion? Write a C program to display Fibonacci series using recursive function. (7)
- b) Write a C program to sort N numbers using functions. (7)
- 19 a) Explain any 5 file handling functions in C. (7)
- b) Write a C program to reverse a string using pointers. (7)

**OR**

- 20 a) Differentiate between array of pointers and pointer to an array. (7)
- b) Write a C program to count number of lines in a text file. (7)

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