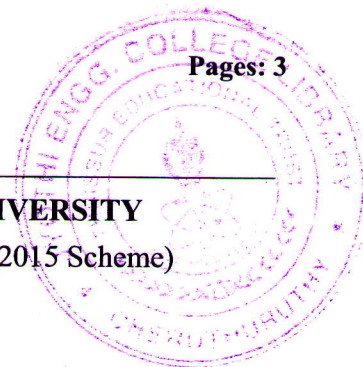


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S1,S2 (S,FE) Examination May 2021 (2015 Scheme)

**Course Code: CS100****Course Name: BASICS OF COMPUTER PROGRAMMING (CS,IT)**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all Questions.*

- | | | Marks |
|----|--|-------|
| 1 | Write the value of the following expressions in C language:
(i) $5 \ ? \ 6 : 7$ (ii) $2 == 3$ | (3) |
| 2 | Point out the purpose of break and continue statements in C. | (3) |
| 3 | Write a C program to accept a string and display it after converting all lowercase letters to uppercase. | (3) |
| 4 | Compare structure and union in C language. | (3) |
| 5 | Write the output of the following C program code.
<pre>void main() { int a[] = {30, 20, 10}; printf(“%d %d %d\n”, *a, *a+1, *(a+1)); }</pre> | (3) |
| 6 | Write the C language statements for the following:
(i) Define an array of pointers for storing the names of months.
(ii) Define an array of structure for storing the register number, name and 4 marks of 50 students in a class. | (3) |
| 7 | Define a function in C for counting the number of digits of a counting number passed to it. | (3) |
| 8 | Write a recursive function for finding the n! (factorial of n). | (3) |
| 9 | Compare the features of automatic and static variables in C. | (3) |
| 10 | Write a function to check whether a given character is present in a string. Character and string are passed to the function. If the character is present return 1 otherwise return 0. | (3) |
| 11 | What do you understand by command line arguments? How it is implemented in C language? | (3) |

01000CS100092001

- 12 Given, fp is a file pointer pointing to a text file opened in read mode. Write the fseek() for moving the file pointer (fp) to : (3)
(i) the last character in the file (*NOT the end of file*).
(ii) move to the beginning of the file.
(iii) move to the just previous character.
- 13 Write the syntax of fwrite() function and point out what are the arguments. (2)
- 14 Suppose a is an unsigned integer variable whose value is 0x5978. What will be the value of b, after executing the statement, b = a << 5; (2)
(Give the value of b in hexadecimal form.)

PART B

Answer any four questions. Each question carries 8 Marks

- 15 Write the syntax and explain the working of different iterative statements in C language. (8)
- 16 a) Write a program for finding the largest element in a MxN matrix of integer numbers. Display the largest number and its position. (5)
b) Write a program to count the digits in a string. (3)
- 17 a) Suppose S is a structure variable, SP is a pointer to structure and is pointing to S and m is a member of structure. Write the two different expressions in C language for accessing the member m using SP. (3)
b) Define a function, using pointers, for concatenating two strings passed to it. Second string is concatenated to the first one. Do not use any library functions. (5)
- 18 Write a function for checking whether a counting number is prime or not. Using this function write a program for displaying the prime numbers in first N counting numbers. (8)
- 19 a) Write a C program for finding the smallest of N integer numbers. (4)
b) Write a recursive function for finding the kth fibonacci number. Fibonacci series is 1, 1, 2, 3, 5, 8, 13, 21,

PART C

Answer any two full questions. Each carries 14 Marks

- 20 a) Write a program to sort a set of N student names in alphabetical order. A student name may contain space. (8)

01000CS100092001

- b) Write a program to check whether a given number is present in a set of N numbers. If the number is present display the position of the number in the list. If not present display suitable message. Repeat the search operation if the user wants to continue. (6)
- 21 a) Using command line argument copy the content of one text file to another. (6)
- b) Implement wc command in UNIX. The wc command displays the number of lines, words and characters in the specified file. (8)
- (usage is **wc <filename>**)
- 22 a) Point out the difference between external variable definition and external variable declaration. (3)
- b) You are given a two byte unsigned number. Illustrate how bitwise operators can be used to separate the low order byte and high order byte from the given number. (4)
- c) An unformatted file named "NUM.DAT" contains a set of integer numbers written to the file using fwrite() function. Write a C program for displaying the numbers stored in the file and also find the average of these numbers. (7)
