Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech degree examinations (S), September 2020 (S1/S2 - 2015 Scheme)

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

Max. Marks: 100   Duration: 3 Hours

PART A
Answer all questions, each carries 2 or 3 marks.

		Marks
1	What are pre-processor directives? Give two examples.	(3)
2	Discuss the concept of command line arguments in C.	(3)
3	Evaluate the function 'y' using conditional operator. $$y=\begin{cases} 1 & if\ x > 5 \\ 0 & if\ x \le 5 \end{cases}$$	(3)
4	What is the purpose of 'return' statement? Can multiple 'return' statements be included in a function? Justify your answer.	(3)
5	Differentiate between malloc and calloc functions in C.	(3)
6	What are global variables? Give examples.	(3)
7	Describe the precedence and the associativity for the bitwise shift operators.	(3)
8	What are the uses of ftell( ) and rewind( ) function?	(3)
9	What is the purpose of the one's complement operator? To what types of operands does it apply?	(2)
10	Differentiate formal and actual arguments in a function.	(2)
11	Explain single dimensional array with an example.	(2)
12	Develop a C program to generate Fibonacci series.	(2)
13	Write a C program to copy a string without using a built in function.	(2)
14	Explain nested structure with an example.	(2)
15	Describe the different ways to categorize data files in C.	(2)
16	Write a program to find the length of a string using pointers.	(2)

PART B
Answer any four full questions, each carries 8 marks.

17	a)	With suitable examples describe the conditional statements in C.	(5)
	b)	Write a C program to find the factorial of a number.	(3)
18	a)	Discuss the structure of a C program with an example.	(5)
	b)	Write a C program to print Floyd's triangle.	(3)

```
1
2 3
4 5 6
7 8 9 10
```

19   Write a C program to multiply two *m* x *n* matrices.   (8)

20 a) With an example, explain how pointers and arrays are related.   (3)

    b) What will be the output of the following code?   (5)
```
#include<stdio.h>
void main()
{
int x=10,y=10;
int *p1=&x,*p2=&y,*p3;
printf("\n%d  %d",(*p1),(*p2));
(*p1)++;
printf("\n%d",(*p1));
−−(*p2);
printf("\n%d",(*p2));
*p3 = *p1 +(*p2);
printf("\n%d ",(*p3));
*p3 = ++(*p2) − *p1;
printf("\n%d ",(*p3));
}
```

21 a) Define a C function *checkprime*( ) that accepts an integer argument and returns   (5)
        1 if the argument is prime, a 0 otherwise. Write a C program that invokes this
        function to generate prime numbers between the given ranges.

    b) Describe Call by reference parameter passing mechanism in C.   (3)

PART C
Answer any two full questions, each carries14 marks.

22 a) Write a C program to perform binary search on a set of sorted numbers using   (6)
        recursion.

    b) Write a C program to perform selection sort on a set of N numbers.   (8)

23 a) Write a C program to read data from two text files, merge the contents of the   (10)
        two files into a new file and display the merged contents.

    b) Explain bitwise shift operators.   (4)

24 a) Write a C program to check whether a given number is palindrome or not using   (6)
        command line arguments.

    b) Write a C program to read the contents of a text file and find the number of   (8)
        characters, lines and words.

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