

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER MCA DEGREE EXAMINATION, DECEMBER 2018

Course Code: RLMCA101

Course Name: PROBLEM SOLVING AND COMPUTER PROGRAMMING

Max. Marks: 60

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

- | | | |
|---|--|-----|
| 1 | State whether the following statements are true (T) or false (F) and justify your answer
(i) Every C program should have atleast one function.
(ii) In a function declaration arguments are separated by semicolon.
(iii) The function prototype ends with a semicolon. | (3) |
| 2 | What is the meaning of the statement <code>int const x;</code> | (3) |
| 3 | Describe the given string library functions with there syntax and examples.
(a) <code>strcpy()</code> (b) <code>strcat()</code> (c) <code>strcmp()</code> | (3) |
| 4 | Differentiate between structure and union. | (3) |
| 5 | How are one dimensional arrays and two dimensional arrays represented using pointers? | (3) |
| 6 | Write a C program that find the largest of 2 numbers using pointers as reference arguments and the function should return a pointer. | (3) |
| 7 | Write the use of
(a) <code>fputc()</code> (b) <code>fgets()</code> (c) <code>fopen()</code> . | (3) |
| 8 | Give the syntax of <code>fseek()</code> function. Using <code>fseek()</code> how can you move the file pointer to the end of a file and 10 bytes in backward direction from current position. | (3) |

PART B

Answer six questions, one full question from each module and carries 6 marks.

Module I

- | | | |
|---|---|-----|
| 9 | a) Why these variable names are not valid?
test\$var
my counter
9count | (6) |
|---|---|-----|

- b) What is the exact output result of this code?

```
#include <stdio.h>
main()
{printf("Hi\nThere\nWhat is the output\n?");}
```

OR

- 10 a) What is structured programming? (6)
 b) What is a header file? What is a library function?

Module II

- 11 4. Find the output of the following C program: (6)

```
void main( )
{ int a,b,c;
a=b=c=0;
printf("Initial value of a,b,c :%d%d%d\n",a,b,c);
a=++b + ++c;
printf("\na=++b + ++c=%d%d%d\n",a,b,c);
a= b++ + c++;
printf("\na=b++ + c++= %d%d%d\n",a,b,c);
a=++b + c++;
printf("\na=++b + c++= %d%d%d\n",a,b,c);
a = b- - + c - -;
printf("\na=b-- +c --= %d%d%d\n",a,b,c);}
```

OR

- 12 State whether the following expressions are true or false. (6)
- (i) Conditional operator (? :) has right to left associativity.
 - (ii) Logical OR operator has right to left associativity.
 - (iii) C permits mixing of constants and variables of different types in an expression.
 - (iv) Precedence dictates in what order the operators are evaluated when several operators are together in a statement or expression.
 - (v) A typecast is used to force a value to be of a particular variable type.
 - (vi) If both the expressions to the left and to the right of the && operator is true, then the whole compound expression is true.

Module III

13 Write a C program to generate first n Fibonacci terms using recursion. (6)

OR

14 What is meant by the storage class of a variable? Compare the external and the automatic storage class variable with an example. (6)

Module IV

15 Write a C program to sort a set of strings in lexicographical order. (6)

OR

16 Write a C program to multiply two matrices and display the result. (Use function) (6)

Module V

17 Write a C program to count the number of vowels, consonants, digits and spaces in a string using pointers. (6)

OR

18 Describe the following with syntax and some suitable examples: (6)
(i) malloc() (ii) calloc()

Module VI

19 Write a program to read your name, roll number from the keyboard and then write it to a file "address.txt". (6)

OR

20 a) What are register variables? What is the scope of register variables? (6)
b) Summarize the rules for using register variables.
