

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER MCA DEGREE EXAMINATION, JULY 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 | What do you mean by the scope of a variable within a program? What will be the output of the following program?
<pre>int x = 10; main() { int x = 20; printf("%d", x); show(); } show() { printf("%d", x); }</pre> | (3) |
| 2 | Differentiate between malloc() and calloc() functions in C. | (3) |
| 3 | With example explain the use of break and continue statements in C. | (3) |
| 4 | What is the difference between passing by value and passing by reference? | (3) |
| 5 | What are Self referential structures? Explain. | (3) |
| 6 | Write the output of the following program.
<pre>void main() { int x,y,*ptr; x = 0 ; ptr = &x; y = *ptr; *ptr = 1 ; printf("%d,%d",x,y);</pre> | (3) |
| 7 | How are command line arguments passed to a C program? | (3) |
| 8 | What is a macro? Compare macros and functions. | (3) |

PART B

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

Module I

- | | | |
|---|--|-----|
| 9 | a) You have 5 bottles of pills. Each pill weighs 10gms, except for contaminated pill contained in one bottle, where each pill weighs 9gms. How could you tell which bottle had the contaminated pills in just one measurement. | (3) |
| | b) What are library functions? How are library functions accessed in C? Are the library functions a part of C language? | (3) |

OR

- 10 What do you mean by structured programming? Explain the principles of structured programming. (6)

Module II

- 11 a) Describe with example the use of conditional operator in C. (3)
b) How the following C statements are interpreted?(where 'a' is string, 'b' is an integer variable and 'c' is a float variable). (3)
scanf(" %s %*d %f", a, &b, &c);
scanf(" %[^\n]", a);
scanf(" %d m %f", &b, &c);

OR

- 12 Write a C program to accept a string and display it in the reverse order without using strrev function. Also print the sum of ASCII values of the characters in the string? (6)

Module III

- 13 a) Write a user defined function in C to find the average of the numbers stored in an array? (4)
b) What is the purpose of the return statement? Can a function return multiple values? (2)

OR

- 14 What do you mean by recursion? Write a recursive function to generate the prime numbers less than 10. (6)

Module IV

- 15 Write a C program to replace a substring with another string in a given line of text. (6)

OR

- 16 Create a structure to store roll no, name and array of marks in 3 subjects for 10 students. Write a C program to display the details of the students who secured more than 80% of marks. (6)

Module V

- 17 a) Write a program using pointers to count the number of words and number of characters in a line of text. (4)
b) Distinguish between array of pointers and pointer to an array? (2)

OR

- 18 Write a program using array of pointers to find the difference of the corresponding elements of two tables of integers. (6)

Module VI

- 19 What do you mean by bitwise operations? Describe the logical bitwise operators. What is the purpose of each? (6)

OR

- 20 Write a program to remove all the comments from a C program file. (6)
