A   A7302

Total Pages: 2

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER MCA DEGREE EXAMINATION, DECEMBER 2017

Course Code: RLMCA101

Course Name: PROBLEM SOLVING AND COMPUTER PROGRAMMING

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries3 marks.   Marks

1   With the help of flowchart explain the functional difference between while loop   (3)
    and do..while loop.

2   Write a program in C, using recursive function, to find the factorial of a number.   (3)

3   What is a structure? How it is different from union?   (3)

4   Show how a user defined data type is created in C.   (3)

5   What are the advantages of using pointers in C programs?   (3)

6   How can a function return a pointer to its calling routine with an example?   (3)

7   What is the purpose of the library function feof ?   (3)

8   What is a macro? Give an example.   (3)

PART B
Answer six questions,one full question from each module and carries6 marks.
Module I

9   a)   What are the three main principles of structured programming?   (3)

    b)   Summarize the rules for naming identifiers.   (3)

OR

10 a)   What are the different data types in C?   (3)

    b)   What is a symbolic constant? How is a symbolic constant defined?   (3)

Module II

11 a)   What is conditional operator? Explain with an example.   (3)

    b)   Explain unary operators with examples.   (3)

OR

12 a)   What are the commonly used input/output functions in C? Explain with syntax.   (3)

    b)   What is a conversion character?   (3)

Module III

13 a)   Write a program to test whether a number is prime or not.   (3)

    b)   Compare the use of switch statement with the use of nested if-else statements.   (3)

OR

14 a) Explain the various storage classes with relevant examples. (4)

   b) What are function prototypes? What is their purpose? (2)

Module IV

15 a) Write a program that will read a line of text, store it in an array and then display (3) it backwards.

   b) Write a program to find the product of two matrices of compatible size. (3)

OR

16 a) How can structure variables be declared? How do variable declarations differ (3) from structure type declarations?

   b) What is a self-referential structure? (3)

Module V

17 a) What is the difference between array of pointers and pointer to an array? (3)

   b) What is meant by dynamic memory allocation? What library function is used to (3) allocate memory dynamically?

OR

18 a) Write a program to swap two numbers using pointers. (3)

   b) How can the indirection operator be used to access a multidimensional array (3) element?

Module VI

19 a) Write a program to copy the contents of a given source data file to a new (4) destination file.

   b) What is an enumerated data type? Explain with an example. (2)

OR

20 a) Explain in detail about bitwise operators. (3)

   b) What is a command line parameter? Give an example. (3)

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