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Question Paper Code : 27386

5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Computer Technology

XCS 125 / 10677SW205 – PROGRAMMING IN C

(Common to M.Sc. Information Technology and M.Sc. Software Engineering)

(Regulations 2003/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Draw any two flowchart symbols and briefly explain their meaning.
2. Give the classification of algorithm.
3. What are the data types available in C ?
4. What is the need of unsigned char ?
5. Give the syntax of an input statement in C with a sample statement.
6. What is the difference between the 5's in these two expressions ?
`int num [5];`
`num [5] = 11;`
7. When are pointers useful ? Give an example.
8. What do nested structure and an array of structures mean ?
9. Give the syntax to open a file in C.
10. How is the linked list different from arrays ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Define flowchart. Specify the notations used in flowchart. Draw a flowchart to find sum of 'n' numbers. (6)
(ii) Write an algorithm to print all prime numbers within a specified range. (10)
- OR**
- (b) (i) What are the different characteristics of an algorithm ? Explain the structure of an algorithm. (8)
(ii) Write an algorithm to arrange a list of numbers in ascending order. (8)
12. (a) (i) What are user-defined data types in C ? Explain about two user-defined data types with examples. (8)
(ii) Write a program in C to distinguish the pre-increment and post-increment operators as well as pre-decrement and post-decrement operators. Explain with a sample output. (8)
- OR**
- (b) Explain the different types of operators available in C. Give their associativity and precedence chart. (16)
13. (a) (i) Write a 'C' program to find whether the given number is an Armstrong number or not. (8)
(ii) Write a 'C' program using switch case to display a menu that offers five options : read three numbers, calculate total, calculate average, display the smallest and display. (8)
- OR**
- (b) (i) Write a 'C' program to find the second biggest number using an array of n numbers. (8)
(ii) Write a 'C' program to add two M × N matrices. (8)
14. (a) (i) List out the advantages of using functions in C. (6)
(ii) What are the steps in creating and using a function ? Illustrate. (10)
- OR**
- (b) A record contains name of cricketer, his age, number of test matches that he has played and the average runs that he has scored in each test match. Create an array of structures to hold records of 20 such cricketers and then write a program to read these records and arrange them in ascending order by average runs.
15. (a) State the various file I/O functions and explain them in detail. (16)
- OR**
- (b) What is linked list ? Write the operations of linked list with suitable example. (16)