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Question Paper Code : 91391

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Second Semester

Computer Science and Engineering

CS 6202 – PROGRAMMING AND DATA STRUCTURES – I

(Common to :Information Technology)

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What are the uses of pointers ?
2. How are functions invoked in C ?
3. What is an union ?
4. Write commands to create, read and write a file.
5. What is a list ?
6. List the merits of linked list over arrays.
7. Convert the expression $(A-B/C)*(D/E-F)$ into postfix expression.
8. List the real-time applications of queues.
9. Define hashing.
10. Compare linear and binary search.



11. a) Discuss in detail about various control statements available in “C” with suitable examples. (16)
- (OR)
- b) i) What do you mean by “array” ? Explain in detail with examples. (8)
- ii) Explain about passing pointers to functions in detail. (8)
12. a) Write a program in ‘C’ to open, read the contents of a file and to write it in another file. (16)
- (OR)
- b) i) What are the uses of structure data type ? Explain in detail with a sample program. (12)
- ii) Compare structure and union. (4)
13. a) Explain singly linked list and doubly linked list in detail with example. (16)
- (OR)
- b) Give a representation for a polynomial using a singly linked lists. Write an algorithm to add two polynomials. (16)
14. a) Explain about insertion and deletion algorithm for a circular queue in detail. (16)
- (OR)
- b) Discuss the following :
- i) Stack ADT
- ii) Queue ADT. (8+8)
15. a) Write down the algorithm for shell sort and using it sort the sequence of numbers 41, 23, 74, 11, 94, 65, 57, 70, 81, 61. (16)
- (OR)
- b) Write down the algorithm for merge sort and using it sort the sequence of numbers 42, 23, 74, 11, 65, 57, 94, 36, 99, 81, 61. (16)
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