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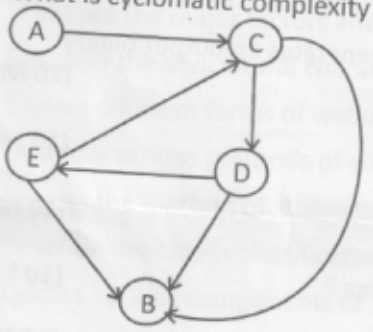
053/21

Total Number of Questions : 32

Time : 3.00 Hours

Max. Marks : 200

1. Encrypt the message 'CRYPT' using shift cipher with key = 10. (2 Marks)
2. Point out the difference between alpha-beta and minimax search algorithms. (2 Marks)
3. Construct a min-heap with seven distinct elements so that the pre order traversal gives the elements in sorted order. (2 Marks)
4. Evaluate the postfix expression :
   952 + – 3 * (2 Marks)
5. Find the Hamming Distance of 10101010 and 11001100. (2 Marks)
6. How pure ALOHA differ from slotted ALOHA ? (4 Marks)
7. What is cyclomatic complexity ? Find the cyclomatic complexity of the following flow graph. (4 Marks)



8. Enumerate various requirement elicitation techniques used in software engineering. (4 Marks)
9. List out various factors that influence the cost of query evaluation. (4 Marks)
10. Assuming a demand paging system with three frames, how many page faults would occur for LRU and FIFO replacements if the page reference sequence is 7, 2, 3, 1, 2, 5, 3, 6, 7, 7, 1 ? (4 Marks)
11. What are the advantages of using optical fiber cables for data transmission ? (5 Marks)
12. Describe the internal representation of fixed point decimal numbers. (5 Marks)
13. Explain how the concept of dynamic memory allocation implemented in C. (5 Marks)
14. Explain Banker's Algorithm for single resource with an example. (5 Marks)
15. Briefly explain the organisation and working of Domain Name System. (5 Marks)
16. Discuss paging and segmentation in memory management. (5 Marks)
17. What will be the time complexity of quick sort if the input is in sorted order ? Justify your answer. (5 Marks)

P.T.O.

18. Compare leaky bucket and token bucket algorithms. (7 Marks)

19. Explain constraint satisfaction problems with example. (7 Marks)

20. What are bitmap indexes ? In which situation are they most useful ? (7 Marks)

21. Discuss the pros and cons of implementing threads in user space. (7 Marks)

22. Describe context Free Grammars. Where are they used ? (7 Marks)

23. Explain the structure of TCP segment with the help of a block diagram. (10 Marks)

24. Develop an algorithm using divide and conquer approach to solve 0/1 knapsack problem. (10 Marks)

25. Describe Link State Routing Protocol. (10 Marks)

26. Design a turing machine that remembers the first symbol it sees and checks that it does not appear elsewhere in the input. Assume that the input comprises of only 0 or 1. (10 Marks)

27. Design a combinatorial circuit which accepts a two bit number and generates an output binary number equal to the cube of the input number. (10 Marks)

28. Discuss about various disk scheduling techniques. (10 Marks)

29. Briefly outline testing strategies suitable for mobile applications. (10 Marks)

30. What are Codd's criteria for relational database management systems ? (10 Marks)

31. Discuss about evolutionary process models for software development. (10 Marks)

32. Compare and contrast conventional signature and digital signature. (10 Marks)