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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**QUESTION SET ON DFA 10/08/2018**

1. **Design a dfa to accept the following language and compute ∂\*(q0 , abbaaba)**

**L={ abbwba | w € { a, b} \*}**

1. **Dfa to accept the Language L={ w | w is of even length and begins with 01}**
2. **Construct DFA to accept strings over{0,1} containing 011 as a substring**
3. **Construct DFA to accept strings over{0,1} ending with 011**
4. **Construct DFA to accept strings over{0,1} starting with 01**
5. **DFA to test whether a binary number is divisible by 5**
6. **DFA to accept strings over{ a, b} containing even number of a’s and even number of b’s**
7. **DFA to accept strings over{ a, b} whose number of a’s is divisible by 5 and the number of b’s is divisible by 3.**
8. **DFA to accept strings over{ a, b}such that every block of length 5 contains atleat two a’s**
9. **DFA to accept strings over{ a} having atleast one a**
10. **DFA to accept strings over{ a, b} having atleast one a**
11. **DFA to accept strings over{ a, b} starting with ab**
12. **DFA to accept strings over{ a, b} ending with abb**
13. **DFA to accept strings over{ a, b} which do not end with string abb**
14. **DFA to accept strings over{ a, b} having a substring aab**
15. **DFA to accept strings over{ a, b} except those having a substring aab**
16. **Construct DFA to accept strings over{0,1} having three consecutive 0’s**
17. **Construct DFA to accept strings over{a,b} L={awa | w€(a+b)n where n≥0}**
18. **Construct DFA to accept strings over{0,1} ending with 010**
19. **Construct DFA to accept strings over{a,b} L={w(ab+ba) | w€(a,b)\*}**
20. **DFA to accept strings over{ a, b} having four a’s**
21. **Obtain a DFA to accept strings of 0’s , 1’s and 2’s beginning with a 0 followed by odd number of 1’s and ending with a2.**
22. **Obtain a DFA to accept strings of a’s and b’s with at most two consecutive b’s.**
23. **DFA to accept strings over{ 0, 1} having L={ w| w€00(0+1)\*11}**
24. **DFA to accept strings over{ 0, 1} having L={ wbab| w{a,b}\*}**
25. **DFA over {a,b} having not more than 3 a’s.**
26. **DFA to accept strings over{ 0, 1} that either begins or ends or both with the substring 01**
27. **L={ w: na(w) =2 , nb(w)≥3} , L={ w: na(w) ≥1 , nb(w)=2} over { a,b}**
28. **DFA to accept decimal strings divisible by 3**
29. **DFA to accept {0 , 1, 2} strings that are divisible by 4**
30. **DFA to accept strings of even number of a’s**
31. **L={ w: |w|mod3=0} where ∑={a}**
32. **L={ w: |w|mod3=0} where ∑={a,b}**
33. **L={ w: |w|mod3≥|w|mod2} where ∑={a}, ∑={a,b}**
34. **L={ w: |w|mod3≠|w|mod2} where ∑={a},∑={a,b}**