CSE331
Assignment 01 Part B
General Feedback

Note: Finding out the corner cases is very important.

11. a) Draw a DFA of strings that have 1 as every 3rd symbol. ∑= {0,1}
- A common mistake is missing on accepting these strings: eps, 0, 1, 00, 0010, etc

Explanation: 0010 should be accepted since you can't show any 0 in the third position that violates the condition of L. Hence 0010 is a member of L, not the L'. Same goes for other strings.

13) Draw a DFA that accepts at least two "00" as a substring. Σ = {0,1}
- 000 should be accepted since there are two 00s in 000 as a substring, 00100 should be accepted.

14. a) Draw a DFA that accepts exactly two "00" as a substring. Σ = {0,1}
- 0000 should be **rejected** since there are three 00s in 0000 as a substring.

15. Construct a DFA defined as L = {An even number of 0s follow the last 1 in w} Σ = {0,1}
- eps, 0, 00, 000, 1, 11 etc should be accepted.

17. Construct a DFA where the set of binary strings where numbers of 0s between two successive 1s will be even. Σ = {0,1}.
- eps, 0, 00, 000, 1, 11, 1000, 010010 etc should be accepted
- 0100100011 should be rejected.

Explanation: 00, 1000 should be accepted since there are no odd 0s between two successive 1s. As the strings are not violating the condition, the strings will be members of L, not the L'.

18. Construct a DFA of the Language, L = { w ∈ $\{0,1\}^*$: no 00 appears as a substring before the first 11 in w.}
- 00, 000, 001 etc should be accepted.

20. a) Construct a DFA of the Language, L = { w ∈ {0,1}* : w contains 01^m0 as a substring where m is divisible by 3 }
- 00 should be accepted since $01^0 0$ is 00 and 0 is divisible by 3. Another example of an accepted string is 01**01110**1

21. a) Construct a DFA of the Language, L = { w ∈ {0,1}*: w = 0^m1^n where m and n are both odd.}
- The strings look like - 000….00001111….1111 where count 0 and 1 will be odd.