

Assignment No = 02

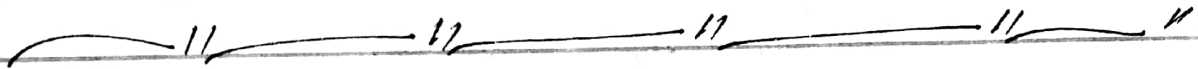
Subject = Digital Logic Design

Spring Semester 2020

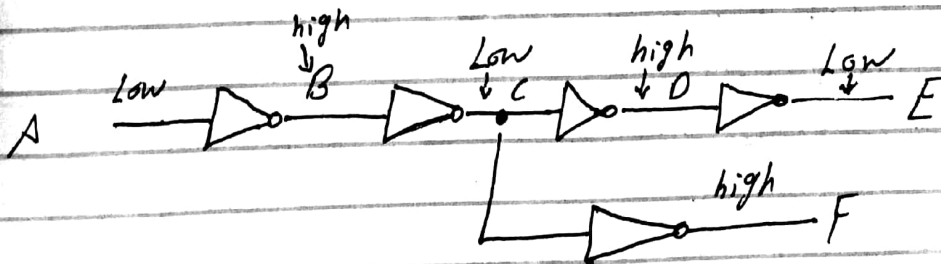
Name = M. YASIR

ID = 15459

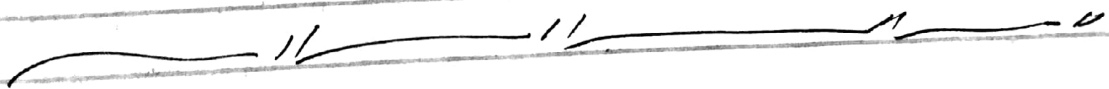
Q1) The Input waveform in fig is applied to a system of two inverters connected in series. Draw the output waveform across inverter in proper relation to input.



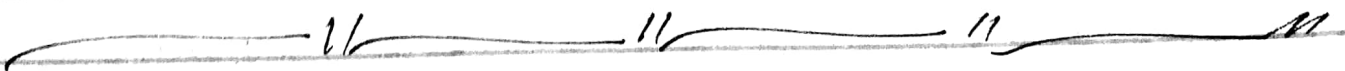
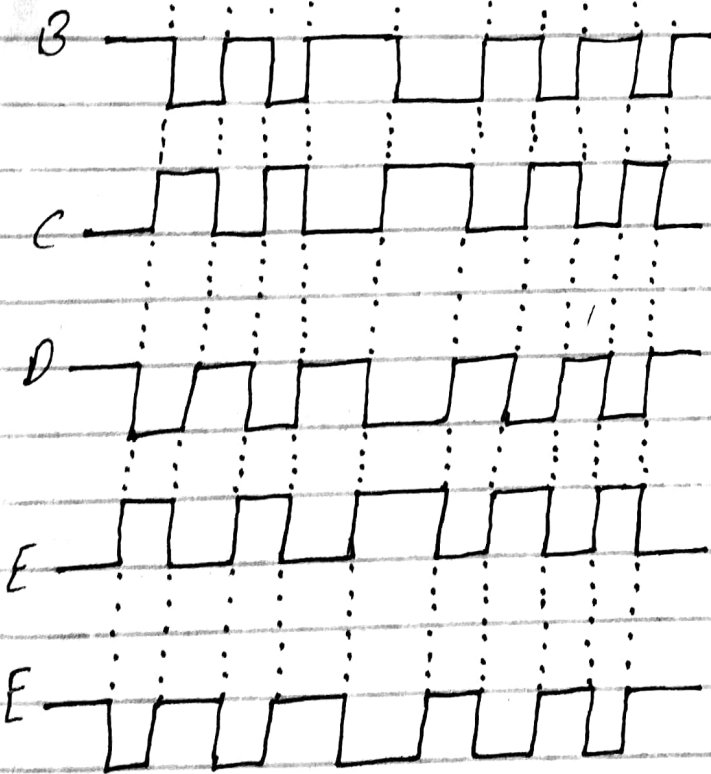
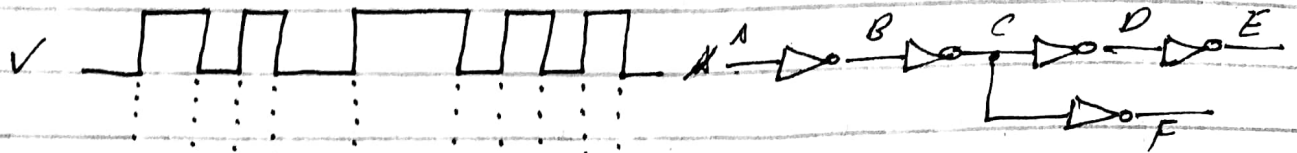
Q2) A combination of inverters is shown in fig. if a low is applied to the point A. Determine the output at point E and F.



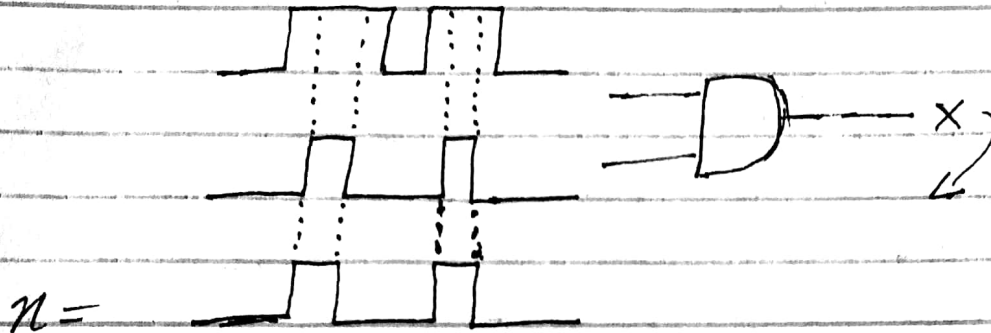
E = Low  
F = High.



Q3) if waveform in Q1 is applied to fig in Q2 at the point A. Determine the waveform from point B to F.



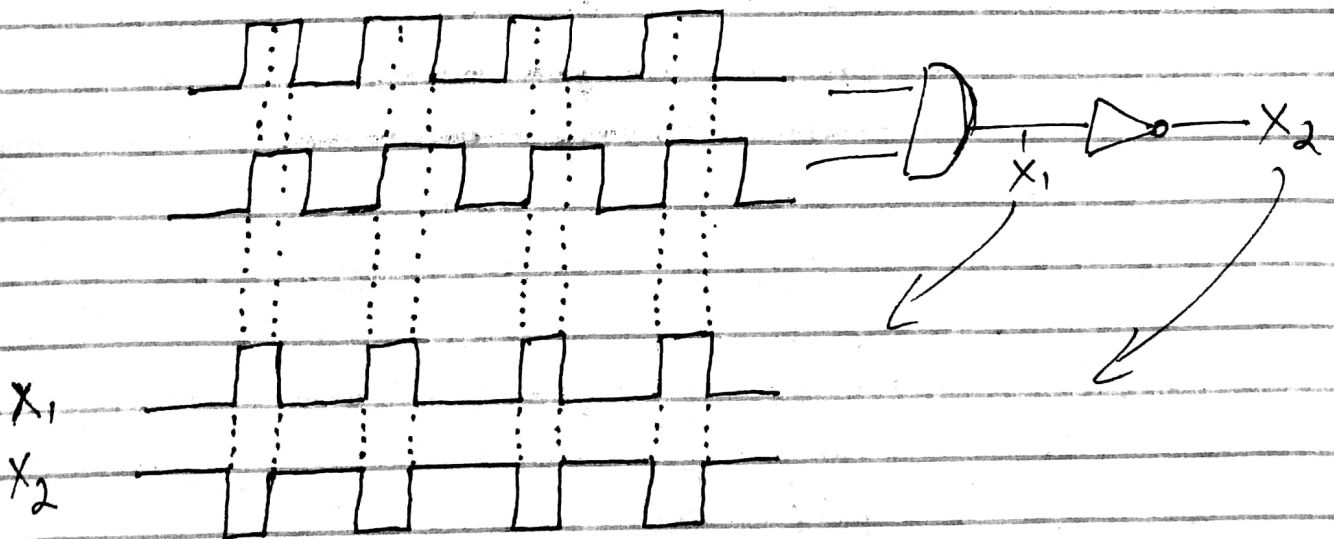
Q4) Determine the output, X for input AND gate with the input waveform in figure.



n =

~~~~~ "~~~~~ "~~~~~ "~~~~~ "~~~~~ "

Q5) The waveform in figure applied to input A and B of a 2 input AND gate followed by an inverter. Draw the output waveform.

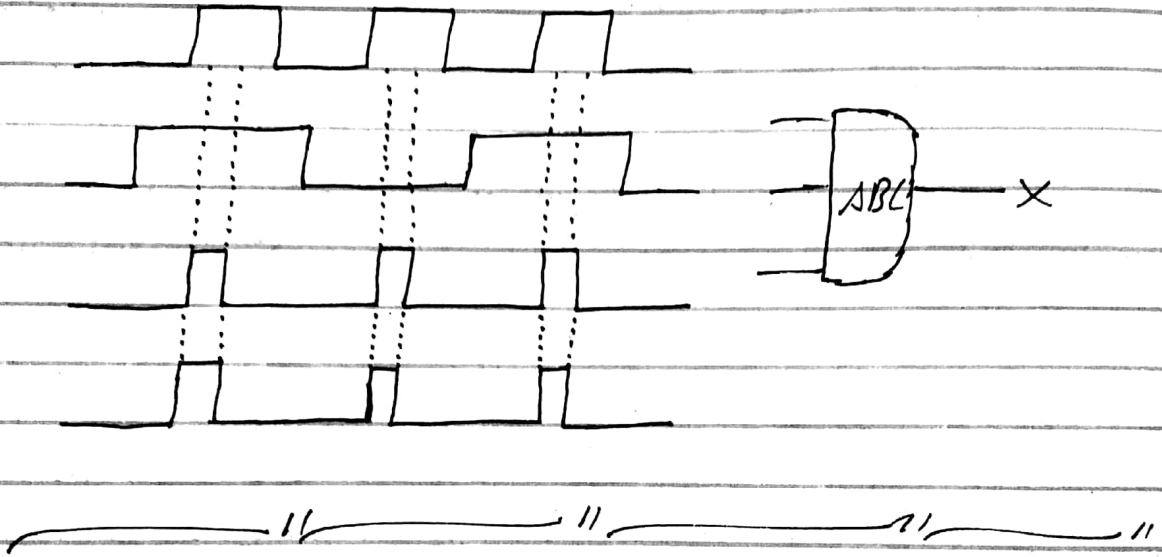


X<sub>1</sub>

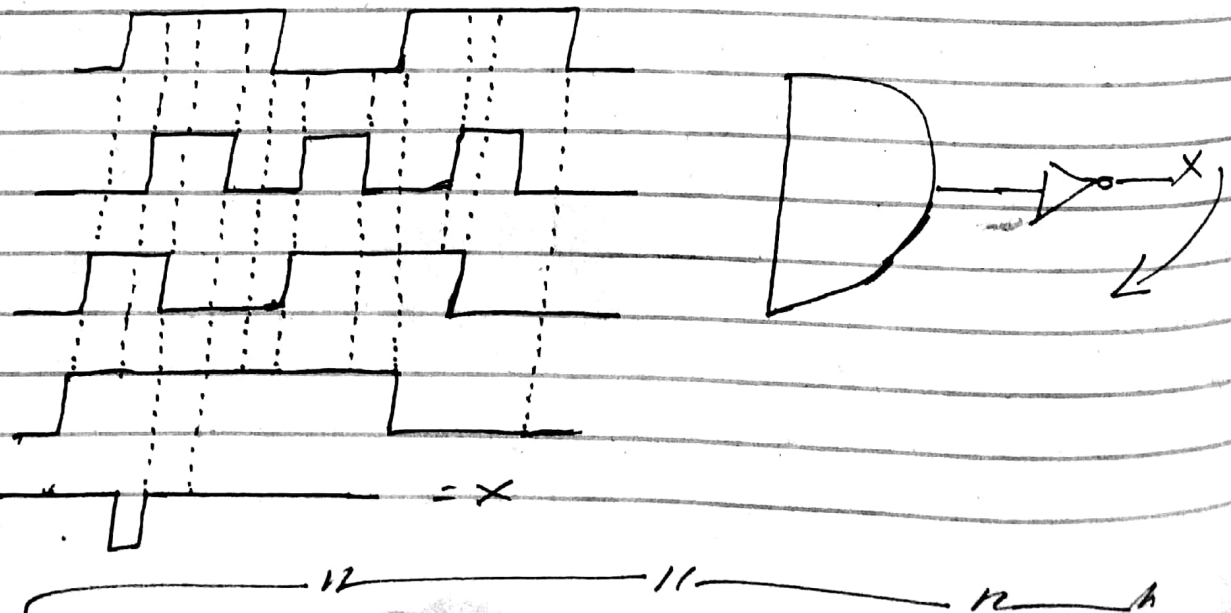
X<sub>2</sub>

~~~~~ "~~~~~ "~~~~~ "~~~~~ "

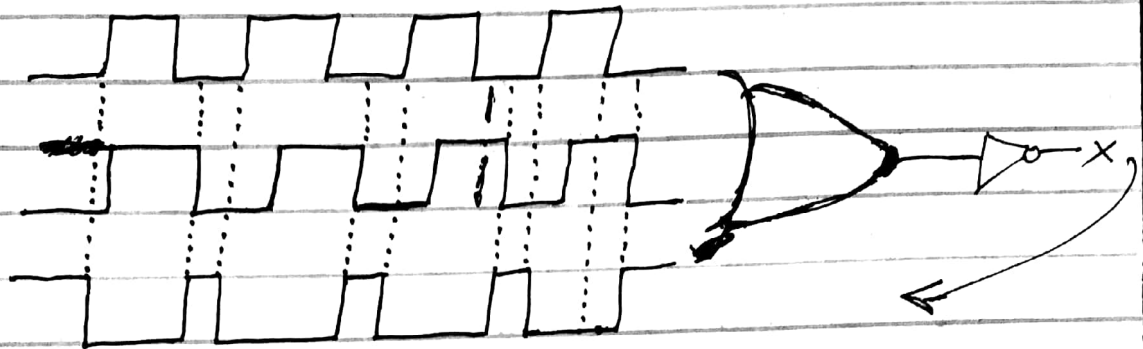
Q6) The input waveform applied to 3-input AND gate are as indicated in figure. Show the output waveform in proper relation to the input with time diagram.



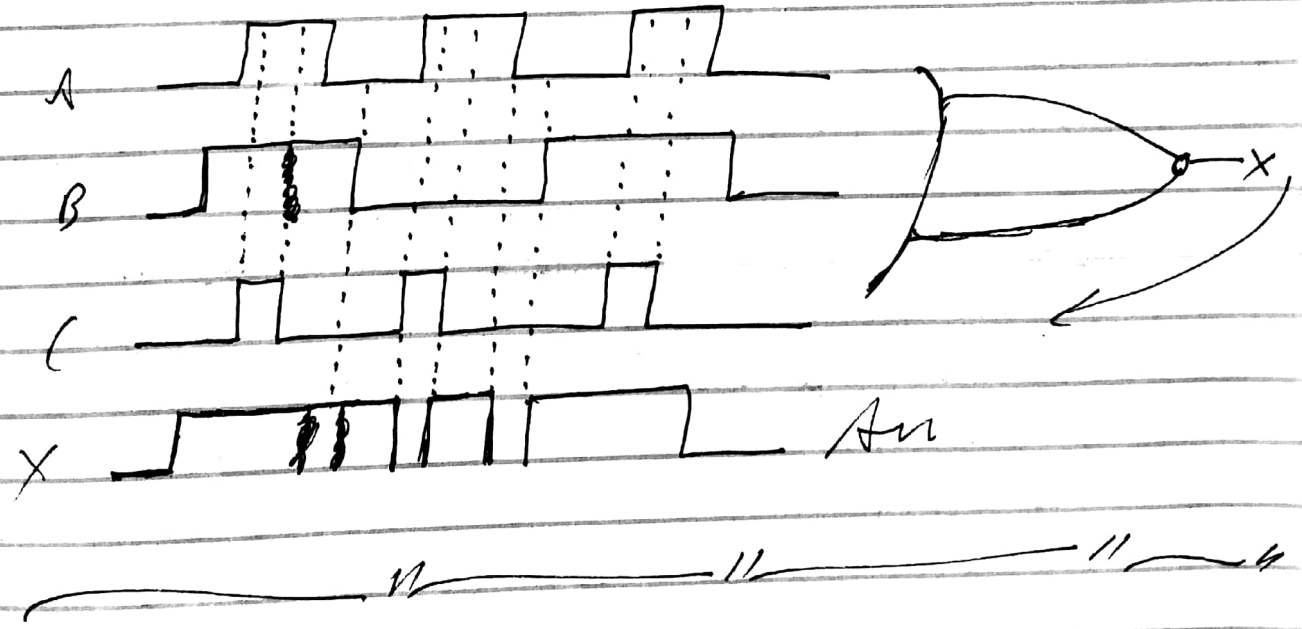
Q7) The input waveform applied to 4-input AND gate as indicate in fig, the output is feed to an inverter. Draw the net output.



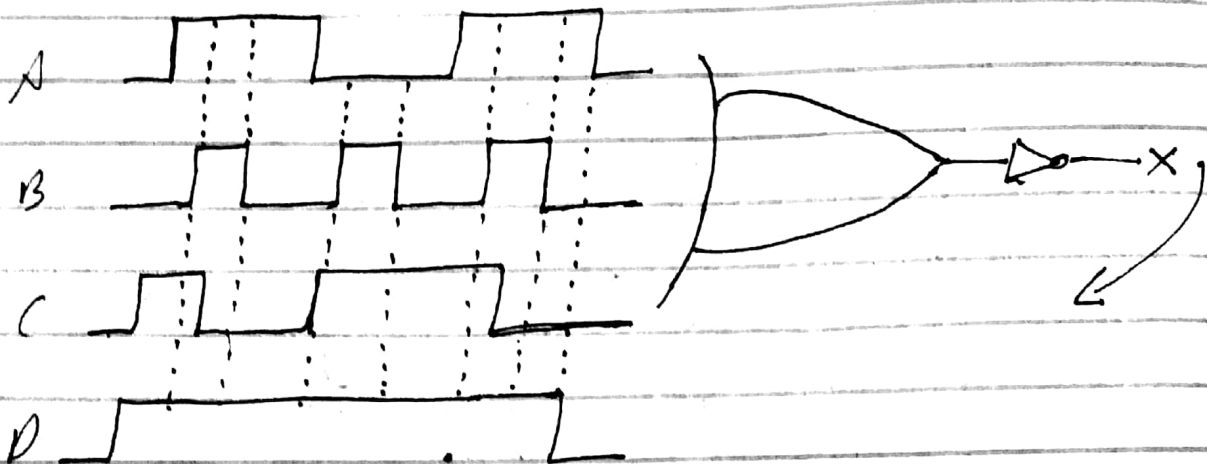
Q.8) Determine the output for a two input OR gate when input waveform are as in fig Q.5 and draw time diagram



Q.9) Repeat Q.6 for 3-input OR gate.

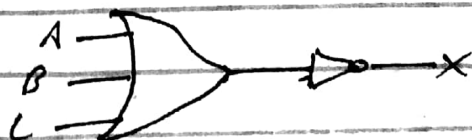


Q10) Repeat Q7 for 4-input OR gate.

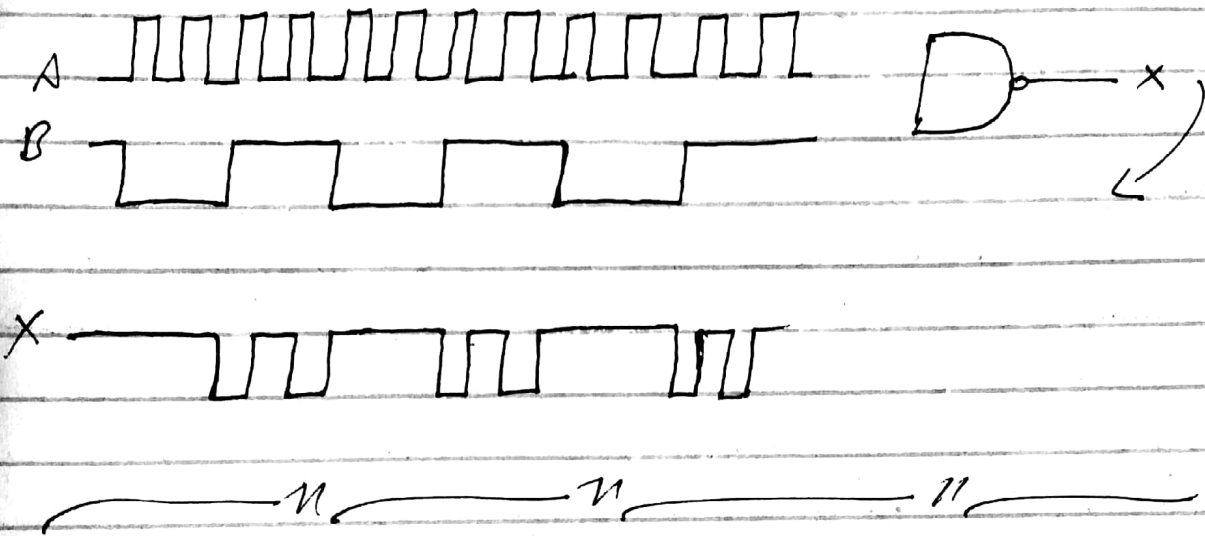


Q11) Show the truth table for a system at a 3-input OR gate following an inverter.

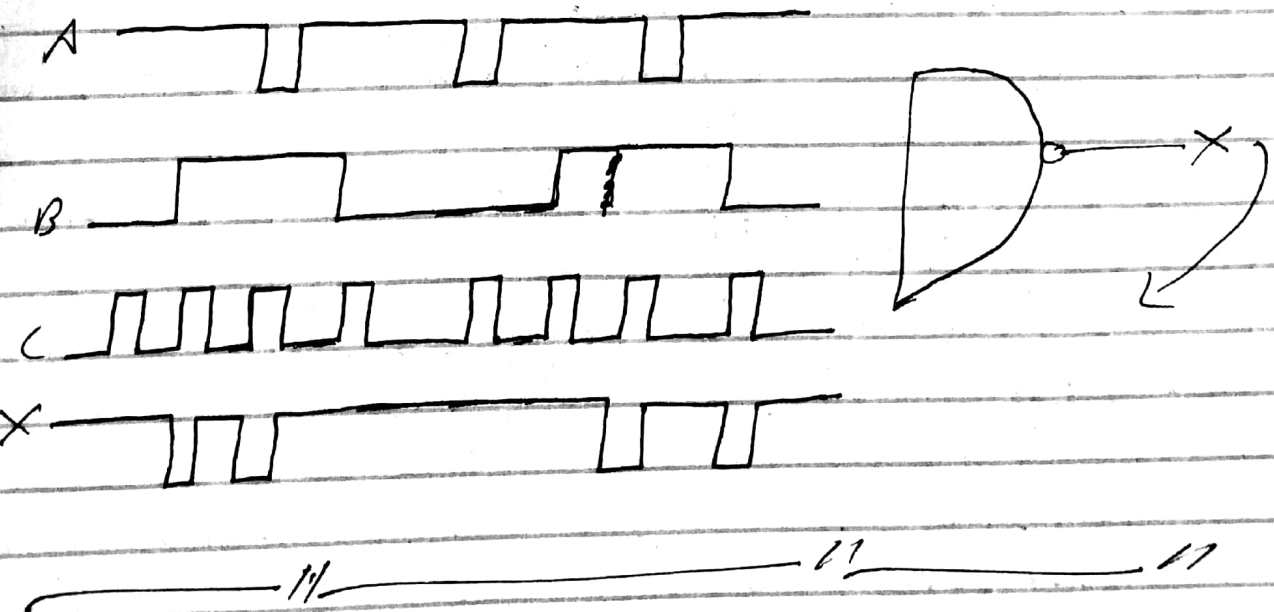
| A | B | C | $(A+B+C)$ | $\neg(A+B+C)$ |
|---|---|---|-----------|---------------|
| 0 | 0 | 0 | 0         | 1             |
| 0 | 0 | 1 | 1         | 0             |
| 0 | 1 | 0 | 1         | 0             |
| 0 | 1 | 1 | 1         | 0             |
| 1 | 0 | 0 | 1         | 0             |
| 1 | 0 | 1 | 1         | 0             |
| 1 | 1 | 0 | 1         | 0             |
| 1 | 1 | 1 | 1         | 0             |



Q13) For the set of input waveform, determine the output for the gate shown in the timing diagram.

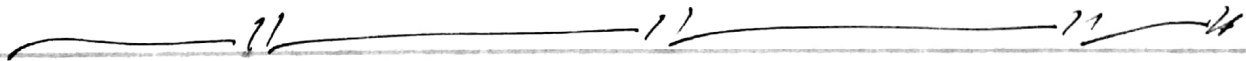
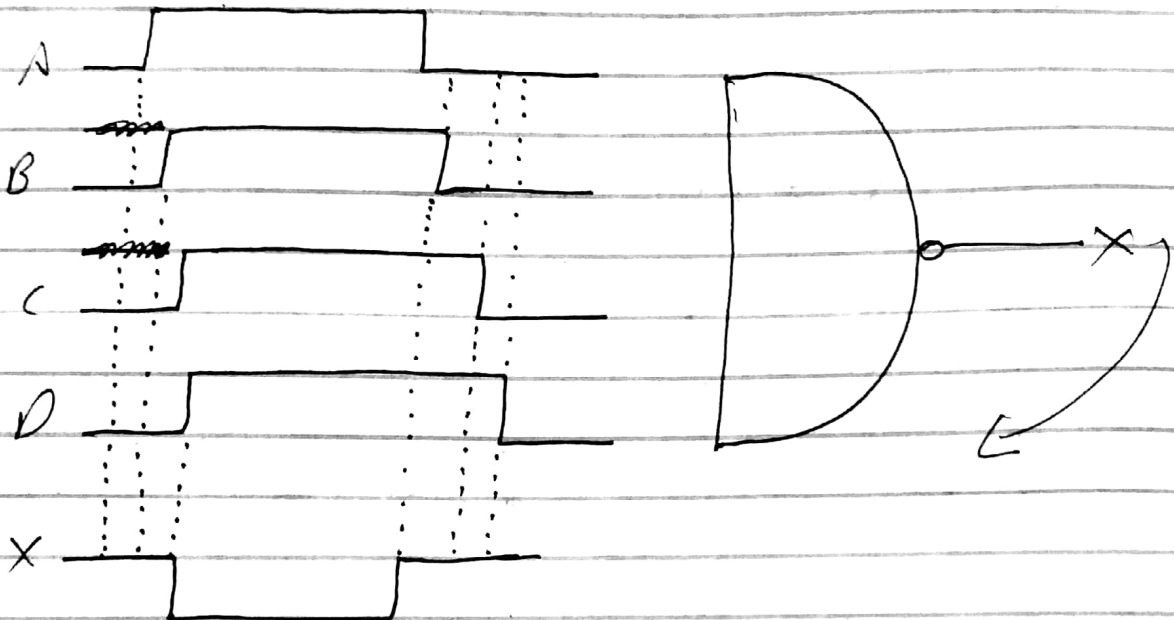


Q14) Determine the gate output for the point waveform in fig and draw diagram.

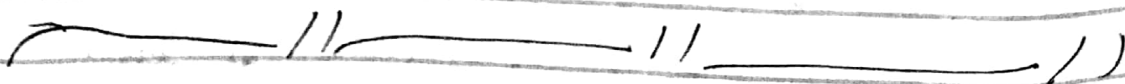
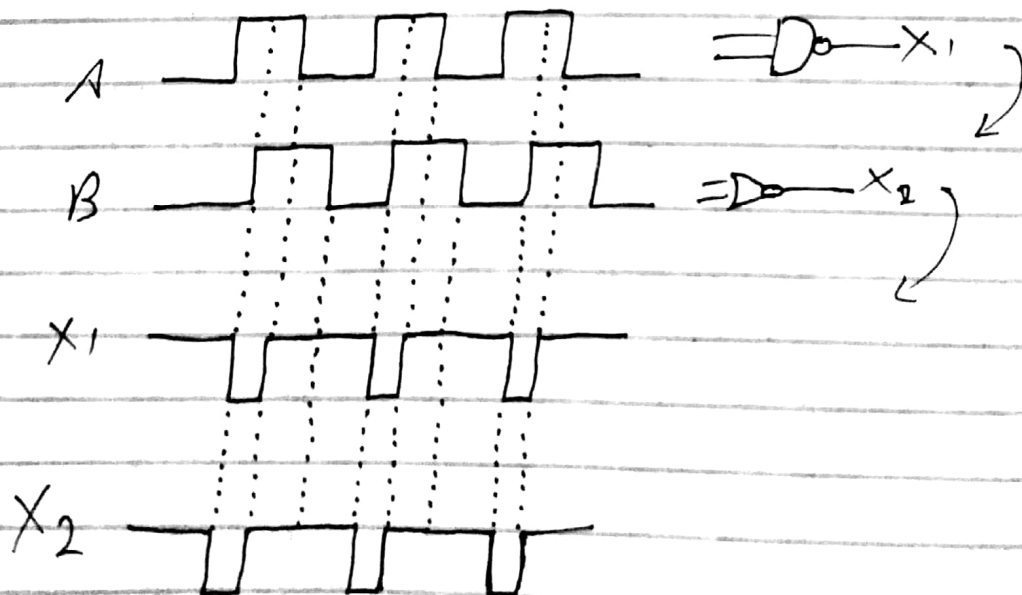




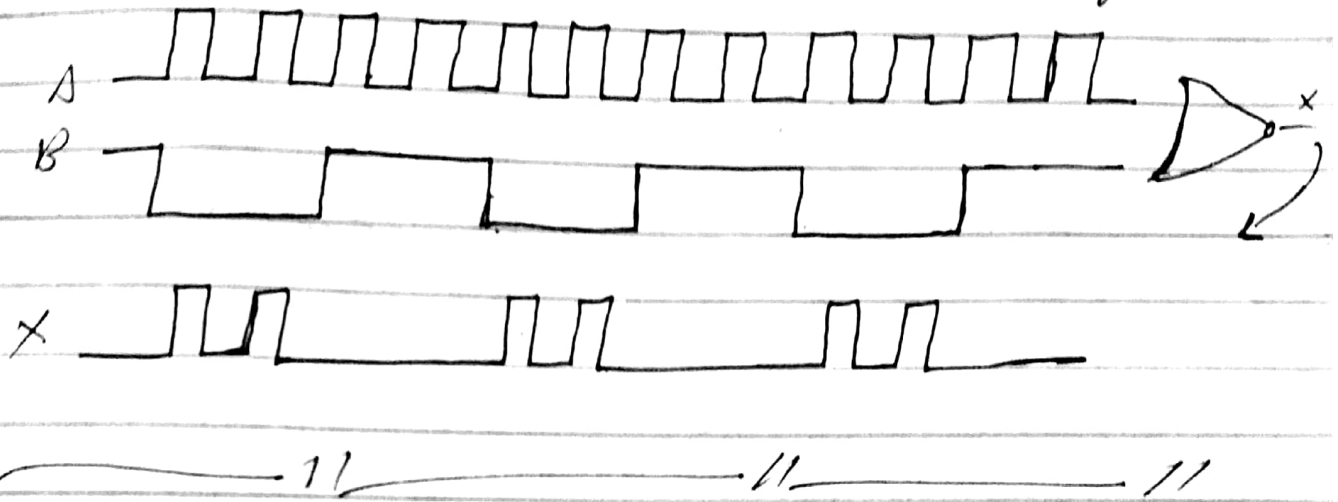
Q15) Determine the output waveform



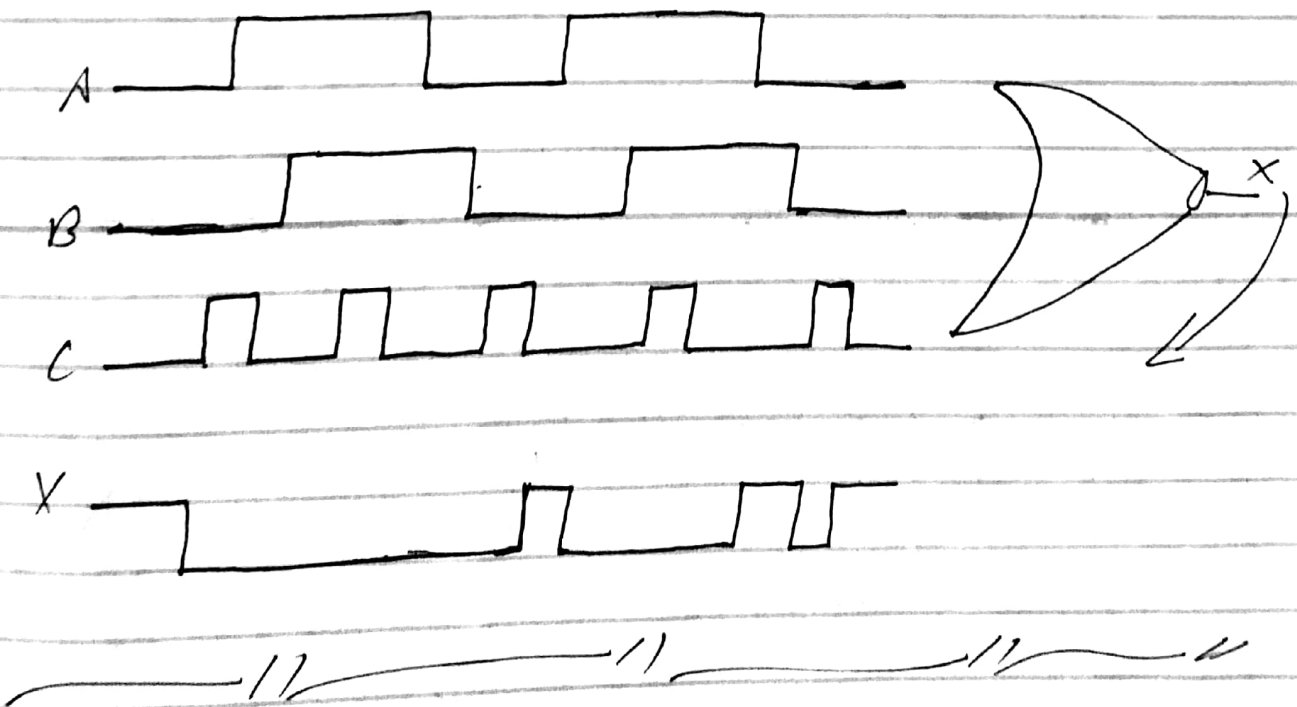
Q16):-



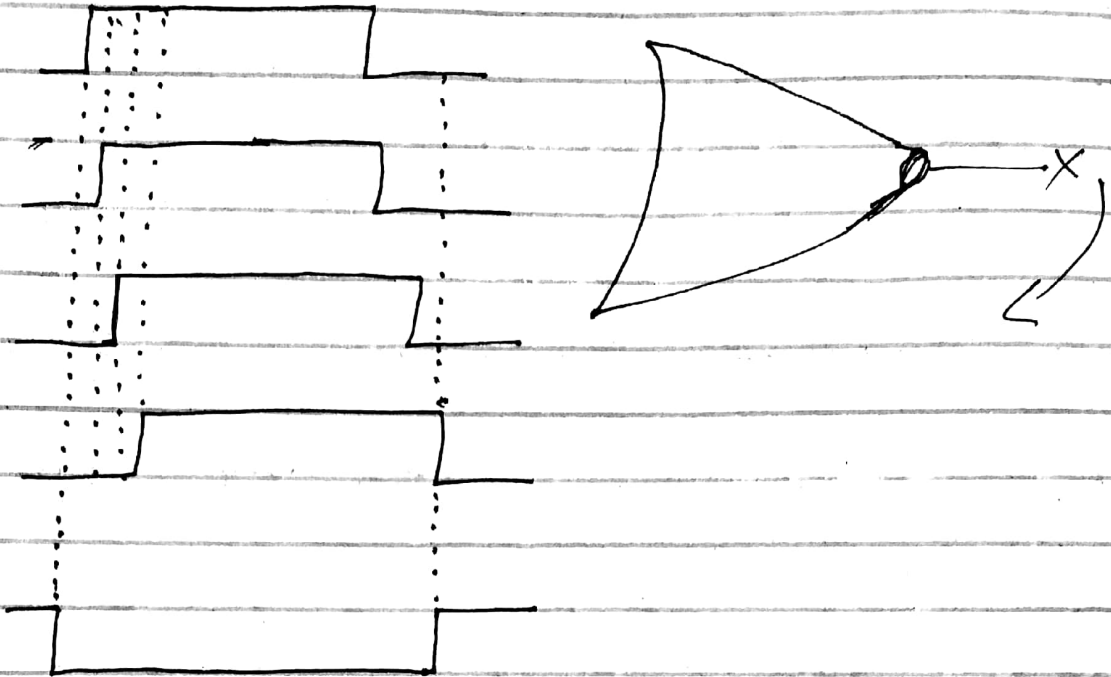
Q17) Repeat Q13 for 2-input NOR gate.



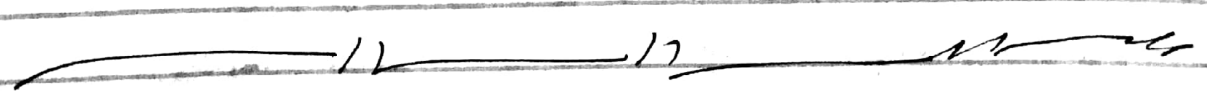
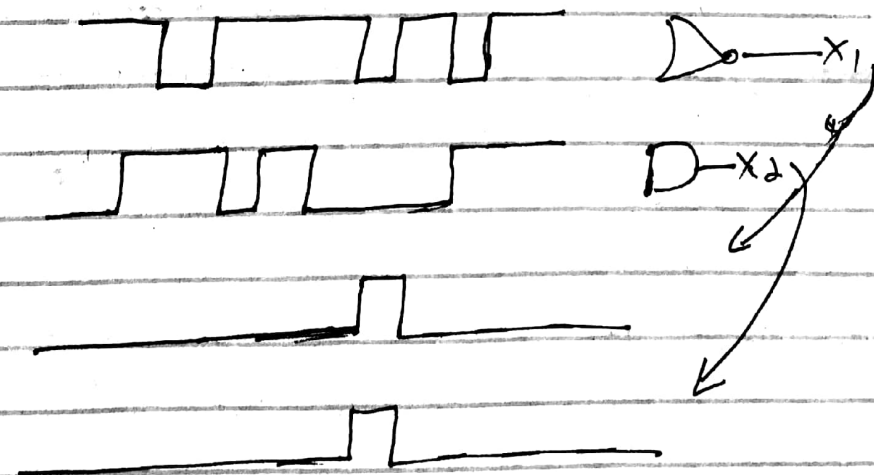
Q18) Determine the output wave form in fig and draw the timing diagram.



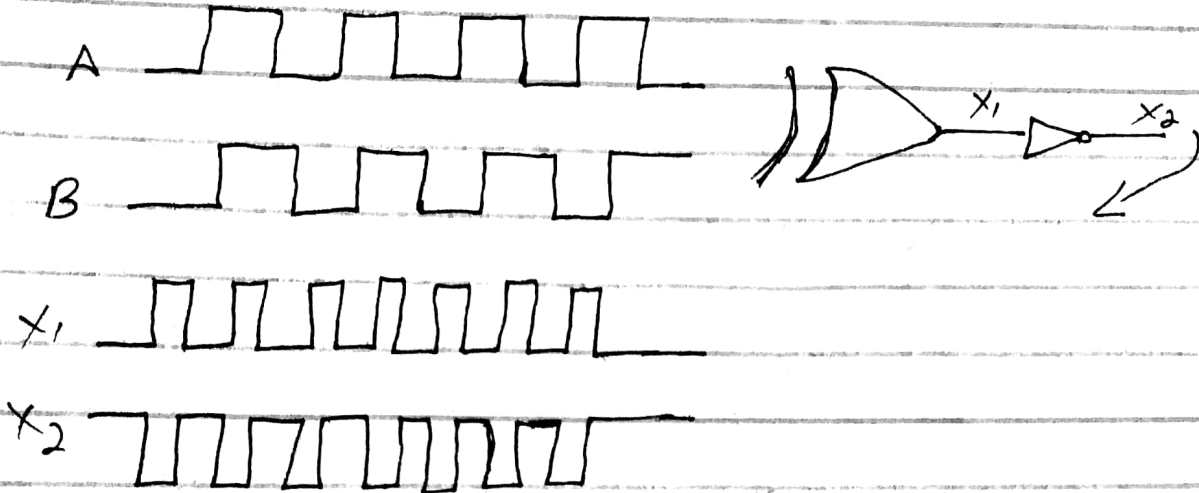
Q19) Repeat Q15 for four input NOR gate.



Q20)



Q2) Repeat Q.5 for exclusive -OR gate.



Q22) Repeat Q.5 for exclusive NOR gate.

