East West University

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ID: 2019-1-60-114

Course: CSE-405

Section: 03

Examination: Midterm

Date: 17/11/2021

Semester: Fall-2021

Instructor: MAR

Ans: to the Q: No: (1)

Here,

B: 01_000011   D: 11111000

Flag: 01111110   Esc: 10001111

Given data is,

☐B   ☐Esc   ☐Esc   ☐Flag   ☐Flag   ☐D

Now we use "Bit stuffing" method :-

01111110   01_000011 1000111111⓪0001111
  Flag   sb

011111⓪10 011111⓪10 11111⓪000 01111110
     sb   sb   sb   Flag

Here, Sb → Stuffed Bit.

for this

$$\boxed{\text{Ans. to the Q. No. 2}}$$

In Physical layer coding violation, nodes determine the boundary of a frame by sensing the Bit time. In data for '1' we use a high voltage and '0' we use a low voltage. Assume that voltage is 5. Then is frame we usually use half of that voltage. That's 2.5. The nodes sense this violation and determine it is frame.

Given bit sequence,

1 0 0 1 0 1 0 1 1

this is
Binary Encoding.

→ 12 micro sec
Bit time

6 micro sec
Bit time

6 micro sec
Bit time
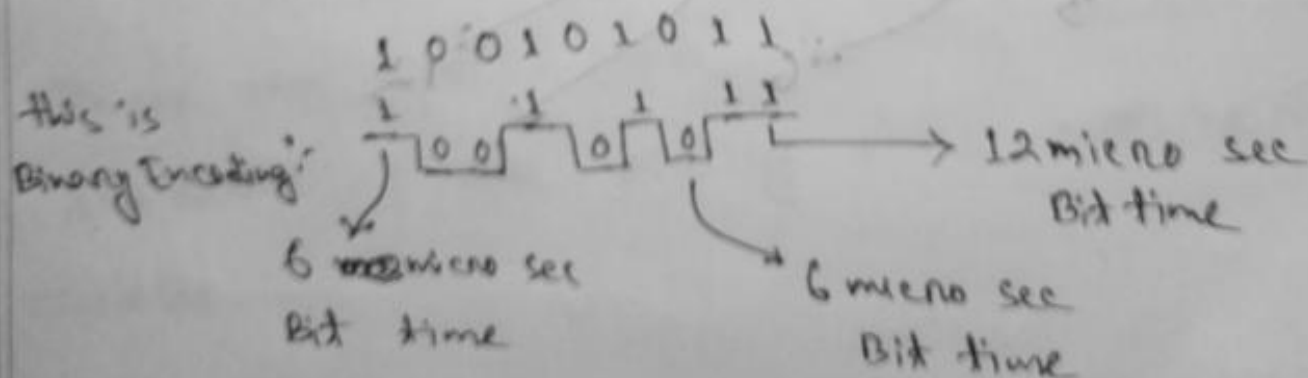
If the first bit is high voltage and it's

value is 6 then : If in the bit sequence there are any consecutive high voltage then it will be 12, 18, 24 ------. etc. Same goes for low voltage. And this is the multiplier of the specific voltag which value is 6 micro sec. This value isn't fixed.

In physical violation the bit sequence will be :-

100101011
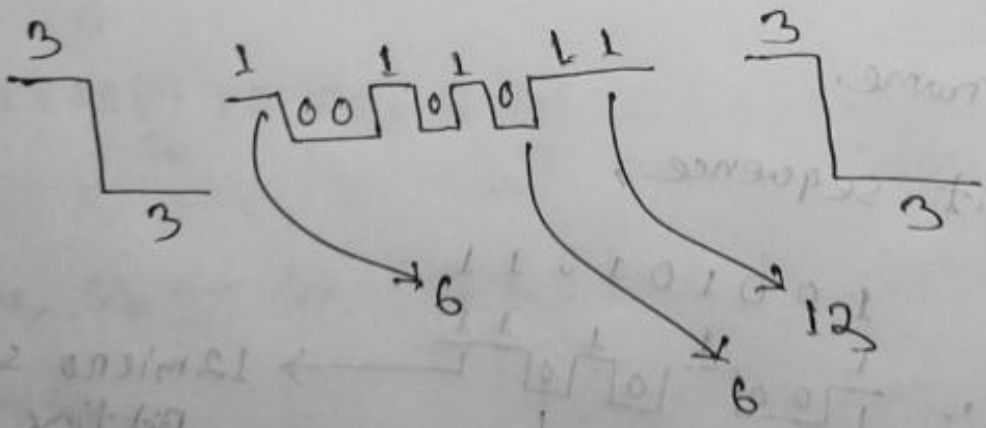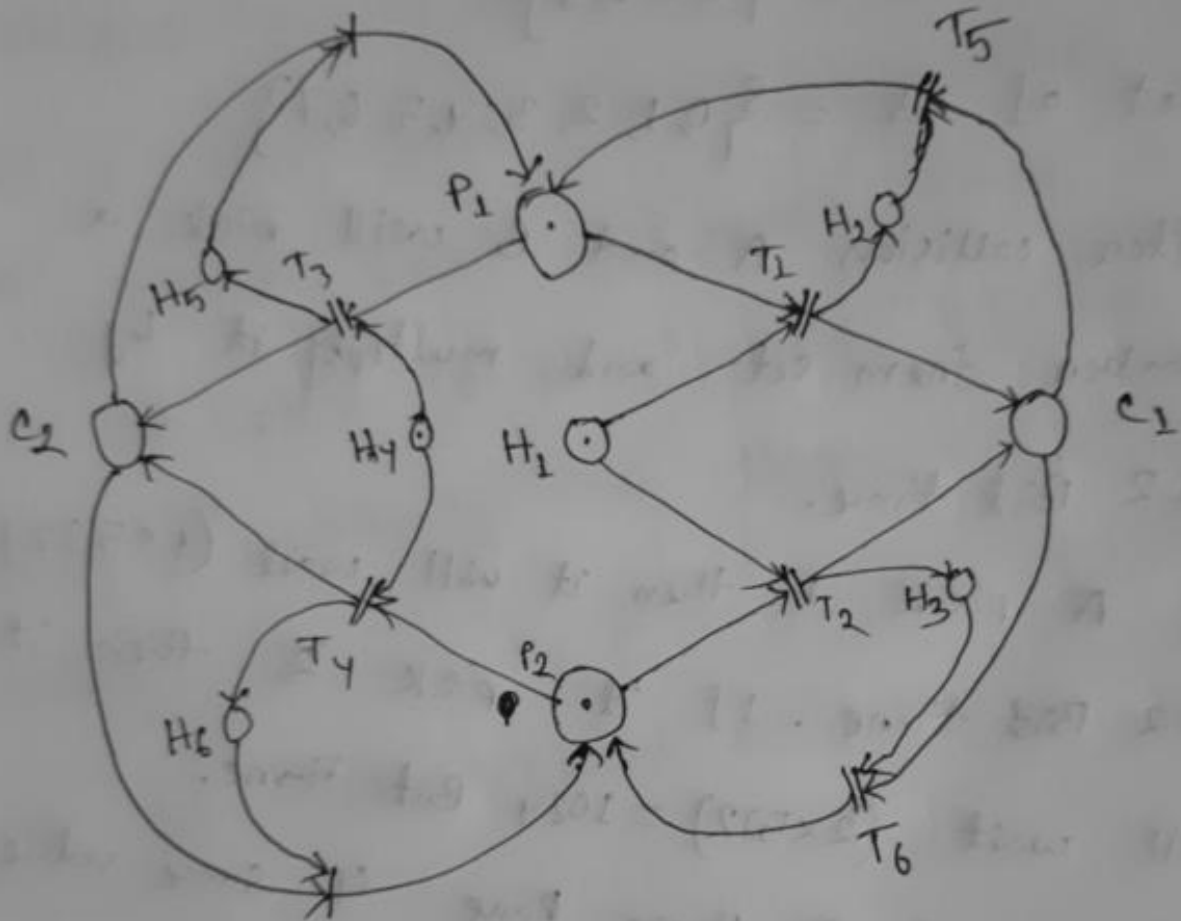
Complete petri net model for
mutual Exclusion

Ans: to the S.No: (4)

Set of $A = \{0, 1, 2, 3\}$

Set of $B = \{0, 1, 2, 3, 4, 5, 6, 7\}$

After collision A and B will pick a number from set and multiply it by 512 Bit time.

If A pick 1 then it will wait $(1 \times 512) =$ 512 Bit time. If it pick '2' then it will wait $(2 \times 512) = 1024$ Bit time.

For A and B there are 4 same value. $\{0, 1, 2, 3\}$. So if A and B both pick the same number at the same time then there will be consecutive collision. Because the wait for a exact same time and after that they will transfer

data at the same time. So there will be collision for 4 elements, which are {0, 1, 2, 3}.
If 'E' also gets into collision then 'A' and 'B' should pick different value or like A can pick '0 to 3' and 'B' can pick '4 to 7' randomly. Then there will be no collision between 'A' and 'B'. So 'E' can get 1st collision with them.

Ans: to the q No:- 3

Here, propagation delay is 9 μsec.
Total nodes = 26.

Here number of Host = 26.

Polling Phase

gap   transmission phase
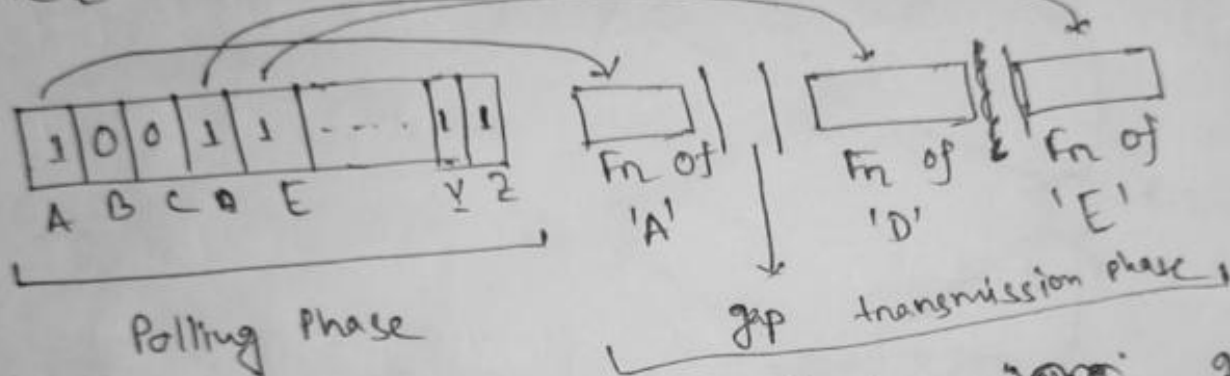
Here 'E' knows there will be gap
before him. So, it counts that and knows
when he can transfer the data.

There are 26 nodes. So the minimum
duration of the polling phase will be = (26×9).

234 μsec.