Mid - 1

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ID :- 2019-3-60-034

Course:- CSE405

Section:- 3

Ans. To Q. No:- 1

Here,

B: 01000011

D: 11111000

Flag: 01111110

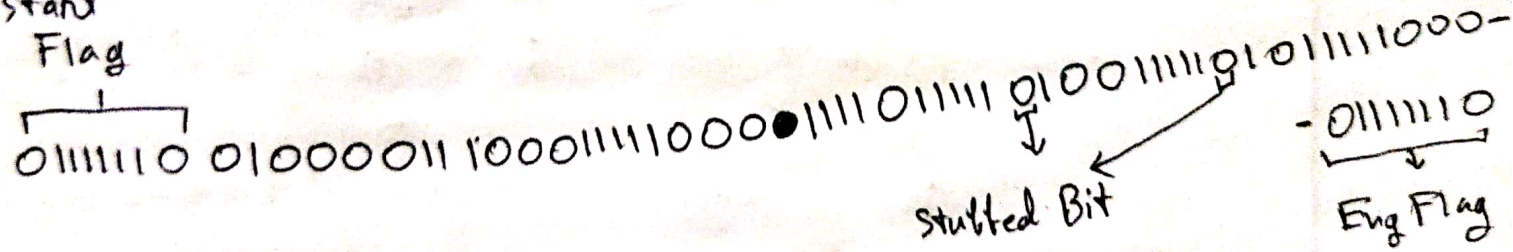
Esc: 10001111

Data to transmit in Frames,

B Esc Esc Flag Flag D

01000011 10001111 10001111 01111110 01111110 11111000

The Frame in Bit Stuffing,



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Ans. TO. Q. NO:- 2

In Physical layer coding violation data is sent in a bit string. when 1 = high and 0 = low voltage. For each bit there is a bit time which will let the reciver will know .. if the bit is 1 or 0. So, To determin the boundary of a frame the start and end bit will have half of the bit time, which will be marked as start and end flag of a Frame. So this bit time violations will be the boundaries.

Now, For the sequence of 10010101 11 Physical layer coding violation will analyze the consecutive 0's and 1's by their bit time. If 5ms is the bit time then for the

Consecutive two 1's, the bit time will be

5 * 2 = 10ms of High voltage and same

of two 0's of 10ms of low voltage. That is how

it will determin consecutive 1's and 0's

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Ans. TO Q.NO: 3

The Propagation delay between the farthest nodes is 9μsec.

There are 26 nodes, so the minimum duration of the polling phase is,

$$\frac{9\mu}{26} = 0.346\,\mu\text{sec per Node}$$

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If the bit map is 10011...101011, Node E will check this bit map and see how many 1's there are before E's turn. I mean that device wants to transmit. So Between each frame

transmitted there is a gap where there will be no signal in the medium. So E' will only have to count the gap, till its turn to transmit comes. That's how Node E will determine its turn.

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Ans. TO. Q.NO:- 8.4

In BEB a device will pick a number from a set randomly and will multiply the bit time with it to get the wait time. The Device will generate the set by using;

$$set = \{0, \ldots, 2^{n-1}\}$$

where, n = number of times of collision.

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From the given set of 'A' the device 'A' will randomly pick a number from,

$$set = \{0, 1, 2, 3\}$$

From the given set of 'B' the device 'B' will also pick a number randomly

From,

set = {0, 1, 2, 3, 4, 5, 6, 7}

Now, they will have collision consecutively if both the devices picks the same number each time. Becaus the the both have to wait the same bit time and fall in a collision in their transmition period.

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The set to Pick of A will be if collision with E is,

A collision = 4

set = {0, ... 2^{4-1}}

= {0, 1, 2, 3, 4, 5, 6, 7}

The set to pick of 'B' will be if collision with E is,

B collision = 5, set = {0, ..., 2^{5-1}}

= {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15}

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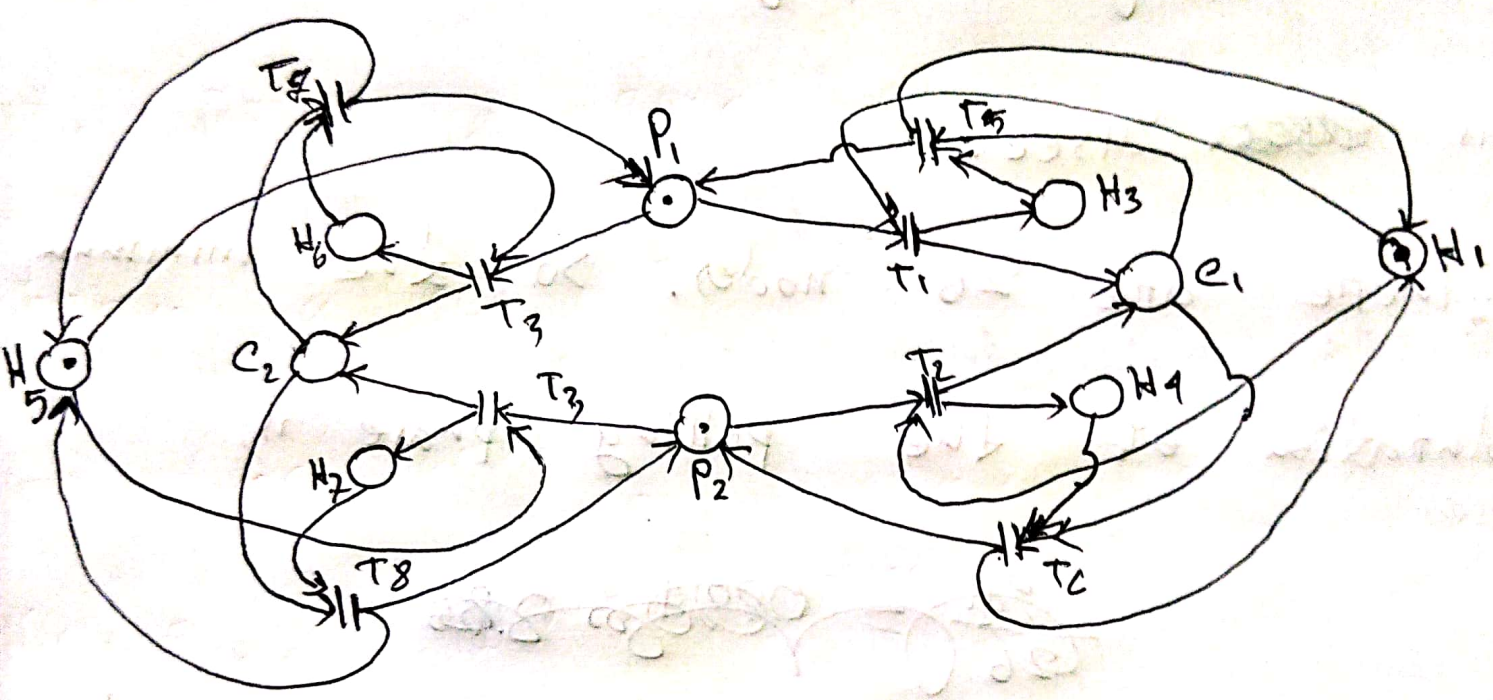
Am. To. Q.NO:- 5



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