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Semester # 8th

Subject # Data by
Computers

Submitted to # Engr.

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Electrical

Final exam | 0

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Q5) A 7-bit Hamming code is received as 1011011. Assume the even parity and state whether the received code is correct or wrong. If wrong locate the bit in error?

Ans!

When the received data is 1101101

$$2^k - 1 \geq m + k, \quad 2^3 - 1 = 4 + 3,$$

$$7 = 7$$

$$C_1 = 1011 \rightarrow \text{Odd}$$

$$C_2 = 1001 \rightarrow \text{Even}$$

$$C_4 = 1101 \rightarrow \text{Odd}$$

$$\text{Bit error} = 1 + 4 = 5$$

The correct data 1001011
we have received a 7 bit Hamming code 1011011
as (1) bit means the error is there and
if it's even so the value of parity
bit is (0) it's mean to detect whether
there are any errors in this receiver Hamming
code.

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(Q1) A

Ans!

The required bandwidth is related to bit rate and the modulation order n .

A 10 is so that the double sided bandwidth $w = \text{symbol rate} = \text{bus rate} \times b / \text{divided by the number of bit per symbol } n$.

The no of bit per symbol is $= \log_2 m$ with m is QAM modulation order so the Bandwidth $w = r_b / \log_2 m$.

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(CPMIOI
port B)

! Service / Protocol !

This is a computing a function that is provide by one program or machine for another protocol is (computing) a set of formal rules describing how to terminate or exchange data especially across network.

Service by Protocol discussion
on computer network!

2 A Network is a setup with protocol is hererching the divide the communication link into several layer. A Protocol is a set of rules for communication with a layer. A Service is what the layer provides to the layer above it through in interface protocol at one layer unaware of issues at another layer.

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(Q no 4)

Part 1

Given data!

$$S = 1000$$

$$W = 8000$$

and r & L are unknown, we find

First the value of r & then

the value of L .

Formula!

$$S = W \times \frac{1}{r}$$

$$r = \frac{W}{S} = \frac{8000}{1000} = 8 \text{ bit/second}$$

$$r = \log_2 L = L = 2^r$$

$$2^8 = 256$$

$$\frac{256}{0} \text{ Ans.}$$

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Q4 Part B

Ans!

A normal speed the sender and receiver clock or same, the sender would send 1,000,000 bits/sec But since the sender clock is 0.3 percent faster than the receiver clock, the data rate would be faster and the sender will be able to send 1,003,000 bits per second now.

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(Q No 2)

Formal Analysis technique of

Network Protocol - Lab.

Nowadays Internet is becoming increasing complex and fragile. Current performance centric technique on network analysis and runtime verification have been inadequate in development of robust network.

This talks about working on recent formal analysis techniques to aid in design implementation and analysis of network protocol.

There are four representative case studies to present classification and taxonomy of techniques such as (meta routing) & declarative formulation and Alloy based analysis.

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Formal Methods · for Protocols!

Formal methods are a particular kind of mathematical based technique that improv network software qualities with guaranteed correctness.

- ① addressing
- ② Routing
- ③ Forwarding

Addressing!

task is to prove targeted addressing schemes continuous to provide nodes of network.

Routing!

To verify BGP can efficiently discover loop free routing paths.

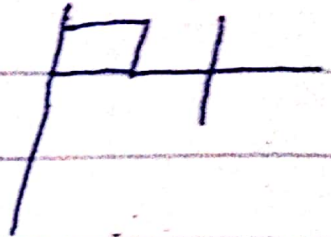
Forwarding!

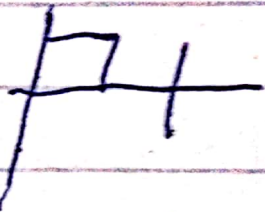
to address various architectural invariants and forwarding operations.

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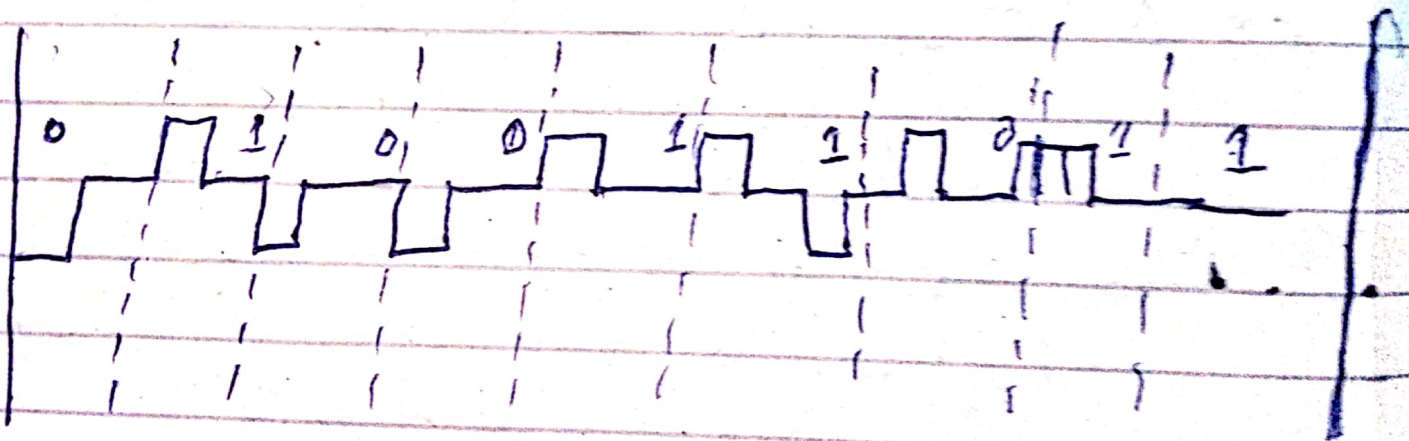
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Q: 3

Ans: Sequence 1 → 

0 → 

0 1 0 0 1 1 0 1



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3)

b)

Sequence
using

0111011200
3B1Q

BIES	level Previous Positive	Previous Level Neg-
00	+1	-1
01	+3	-3
10	-1	-1
11	-3	-3

