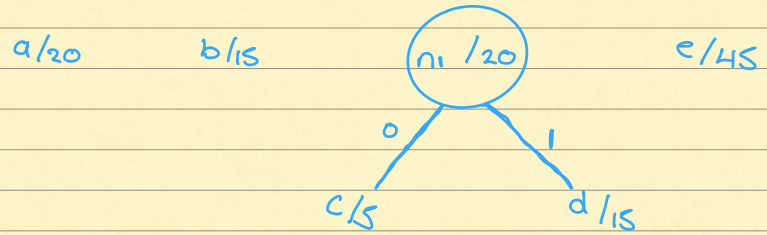
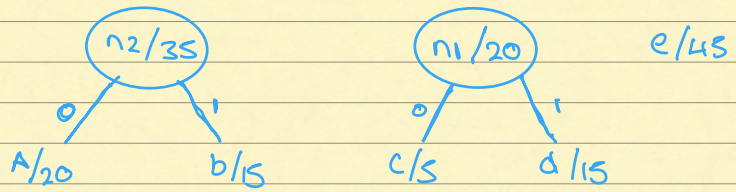
Question 2

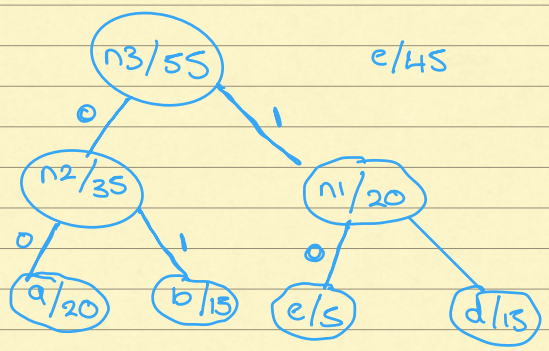
Let A = {A/20, b/15, c/5, d/15, e/45.}



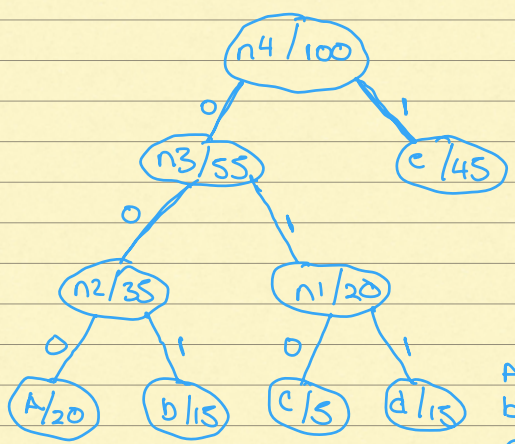
Now A = {A/20, b/15, n1/20, e/45}



A = {n2/35, n1/20, e/45.



A = {n3/55, e/45}



A = 000
b = 001
C = 010
D = 011
E = 1.

Total = (20*3) + (15*3) + (5*3) + (15*3) + (45*1)
60 + 45 + 15 + 45 + 45
= 210

Average = 210/5 = 42 bits Average.

Question 3.

Client: Decompress Received State using State 1. Discard the base State.
Server: Receives Acknowledgement of State 2.
Client: Has Received State Changes With ID of 3.
Server: Fails to Receive Acknowledgement.
Server: Here are Changes Since 2. ID is 4, Packet is Lost.
Client: Decompress Received State using State 3, Discard 1 and 2 State
Server: Here are the Changes Since State 3, ID is 5.
Client: Acknowledgement 5 Sent
Server: ACK Received, Server Sent Packet 6.

Question 4. - Use LZW Algorithm to Compress the String BABAABAAA

BA. P = A C = Empty

Encoded	outPut	String	Table
66	B	256	BA.

BABA P = B C = Empty

Encoded	outPut	String	Table
66	B	256	BA
65	A	257	AB

BABAA P = A C = Empty

Encoded	outPut	String	Table
66	B	256	BA
65	A	257	AB
256	BA	258	BAA.

BABAABAA P = A C = Empty

Encoded	outPut	String	Table
66	B	256	BA
65	A	257	AB
256	BA	258	BAA
257	AB	259	ABA.

BABAABAA P = A C = A

Encoded	outPut	String	Table
66	B	256	BA
65	A	257	AB
256	BA	258	BAA
257	AB	259	ABA
65	A	260	AA

BABAABAAA P = AA C = Empty

Encoded	outPut	String	Table
66	B	256	BA
65	A	257	AB
256	BA	258	BAA
257	AB	259	ABA
65	A	260	AA
260	AA		