

Internal Assessment Test - III

Sub:	Multimedia Communication	Code:	10EC841
Date:	/5/2017	Duration:	90 mins
		Max Marks:	50
		Sem:	VIII
		Branch:	ECE/TCE
Answer Any FIVE FULL Questions			

	marks	OBE CO	RBT
1. Explain the third order predictive DPCM signal encoder and decoder.	10	CO2	L3
2. With a neat diagram explain Real time transport protocol(RTP) and Real time transport control protocol(RTCP).	5+5	CO3	L3
3. Explain the TCP/IP protocol suite with neat diagram.	10	CO2	L1
4. With a neat diagram explain audio/sound synthesizer	10	CO2	L3
5. A series of messages is to be transferred between two computers over a PSTN. The messages comprise just the characters A through H. Analysis has shown that the probability of each character is as follows: A and B = 0.25, C and D = 0.14, E, F, G and H = 0.055. Use Huffman coding to derive a codeword set and construct the corresponding Huffman code tree.	10	CO3	L3
6. Explain with neat diagram a) Broadcast television network b) Integrated service digital network.	10	CO2	L1
7. Explain in detail token ring network frame format and field description.	10	CO2	L3

1) Third order predictive DPCM signal encoder and decoder?

→ DPCM (Differential Pulse Code Modulation) is the process to find the samples using the differential method.

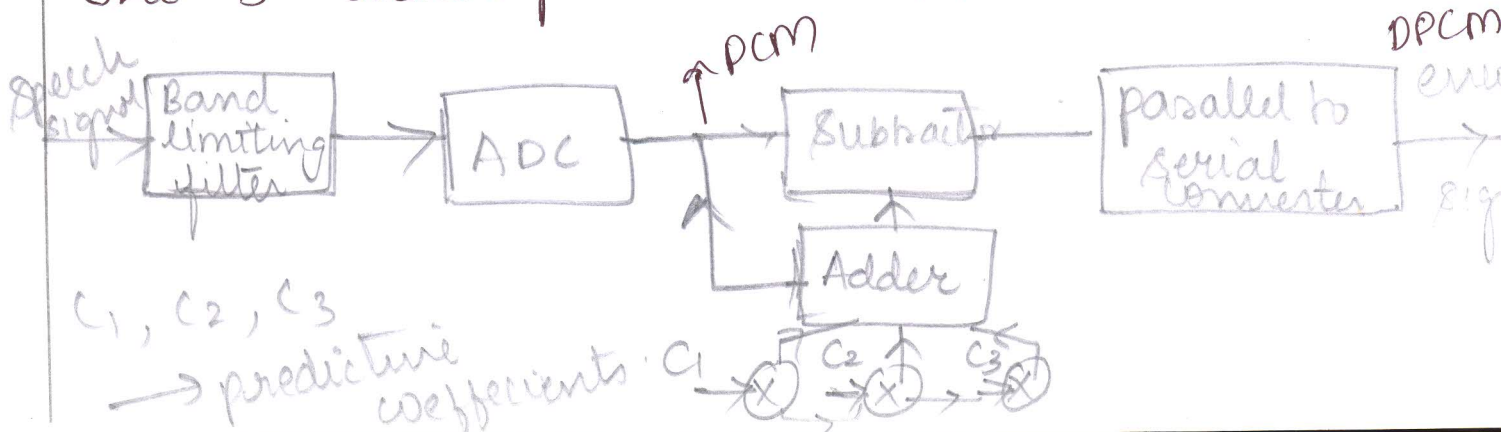
→ The difference in the amplitude of the sampled signals (successive) is less than the original signals.

→ Hence there is less requirement to bits and the bits can be used less.

→ The predictive method is used to reduce the noise when compared to DPCM.

→ Here third order that means the predictive method is done 3 ~~typ~~ times using the predictive coefficients.

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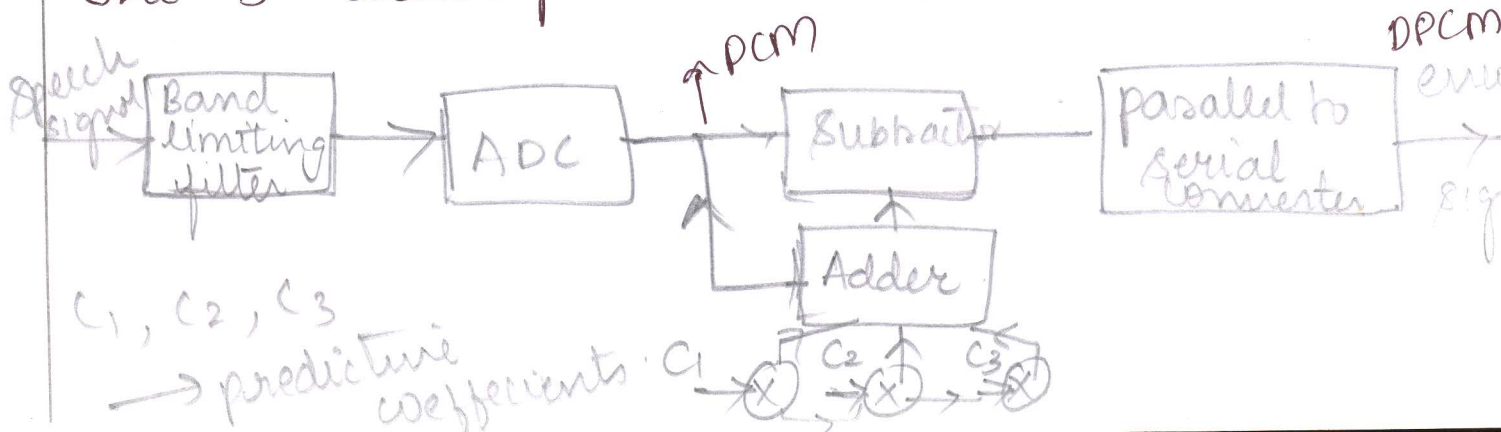
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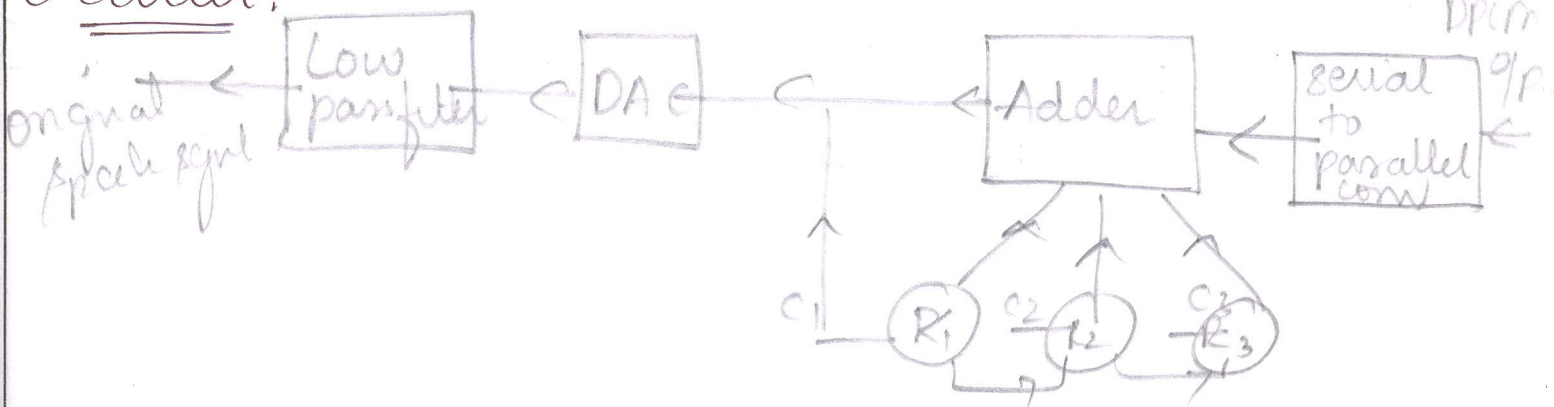
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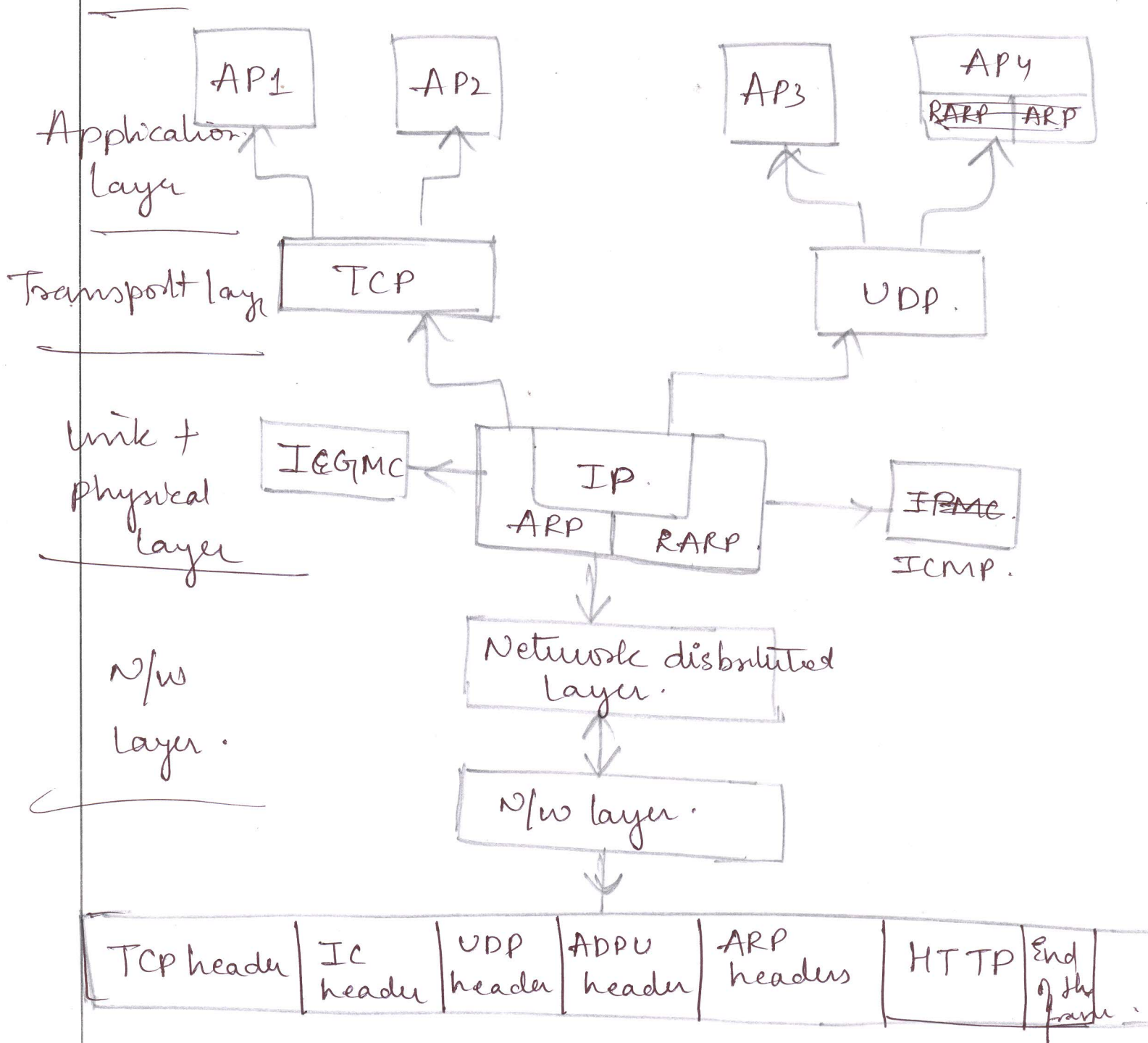
Encoder operation:-

- The speech signal is passed through the Band limiting filter which limits the signal bandwidth according to the sampling frequency.
- Then the signal is passed through the Analog to digital converter which will convert the analog signals to digital samples.
- Here the subtractor is used to take the difference b/w the PCM signal & the DPCM signals.
- Here the coefficients c_1, c_2, c_3 are used to the adder becz it is 3rd order predictive. Hence this is also been sent to the subtractor.
- Hence the 3rd order predictive is reduced from the signal.
- Then last the signal is converted from parallel to serial signal.

decoder:-



(3) TCP/IP protocol suite



TCP/IP protocol suite

The TCP protocol gives the main three characteristics which are

i) It is connection oriented.

The TCP protocol is a connection oriented protocol is also depends on the circuit & the model of the system.

ii) It has a good reliability:-

The TCP protocol has the start of the frame & end of the frame and it has been defined

iii) The frame will be received safely without any delay or destruction.

This uses the AP1 & AP2 layers which gives the ability to transfer data effectively.

→ The IP protocol is the opposite to TCP in which the IP protocol is not connection oriented protocol hence. there is not concern about the size & shape of the circuit.

→ In IP protocol the frame doesn't have any starting or ending address so that it can handle the frame properly.

→ The IP is connected with the ICMP & IGMP

in which the two protocols are related to the IP protocol.

→ IP protocol is non reliable hence it doesn't have specific time to travel the frame from one packet to the other.

→ The N/w layer consists of all the N/w components which are used to communicate with the external IP's.

(1) decoder operation :-

Here the addition of the coefficients takes place. and the rest of the process is same as the encoder.

The decoder has ability to obtain the original signal back.

Hence substitution is not considered in this type of operation.

Keyboard :- This is the device which is used to give the information in the form of codes and this information is very necessary in converting the i/p to the sound signal.

CPU :- Central processing unit :- This is used to store the data in the memory. The saved data can be used in the further use when required.

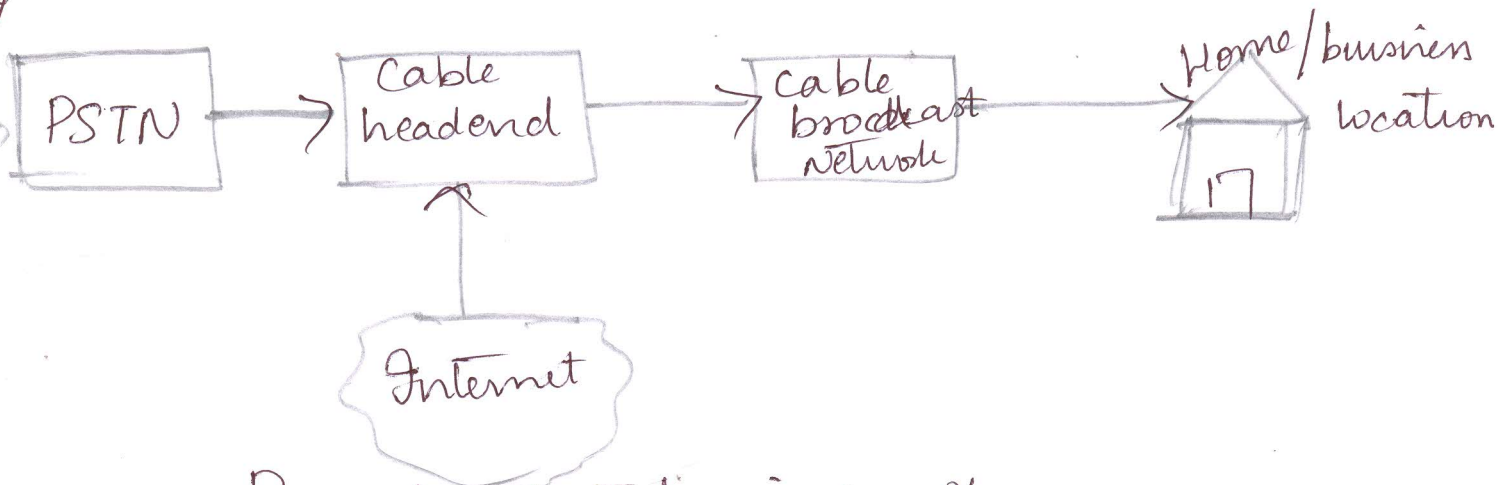
Floppy Disc :- It is a secondary storage device used for storing the data which are not be stored in CPU. This adds to the extra memory with the floppy disc.

Sound system :- This helps to convert the i/p to the sound signal which have the sound packets that is used to produce the sound which is obtained.

Speakers :- These are used in the o/p of the system which can synthesize the signal

6) Broadcast Television N/w:-

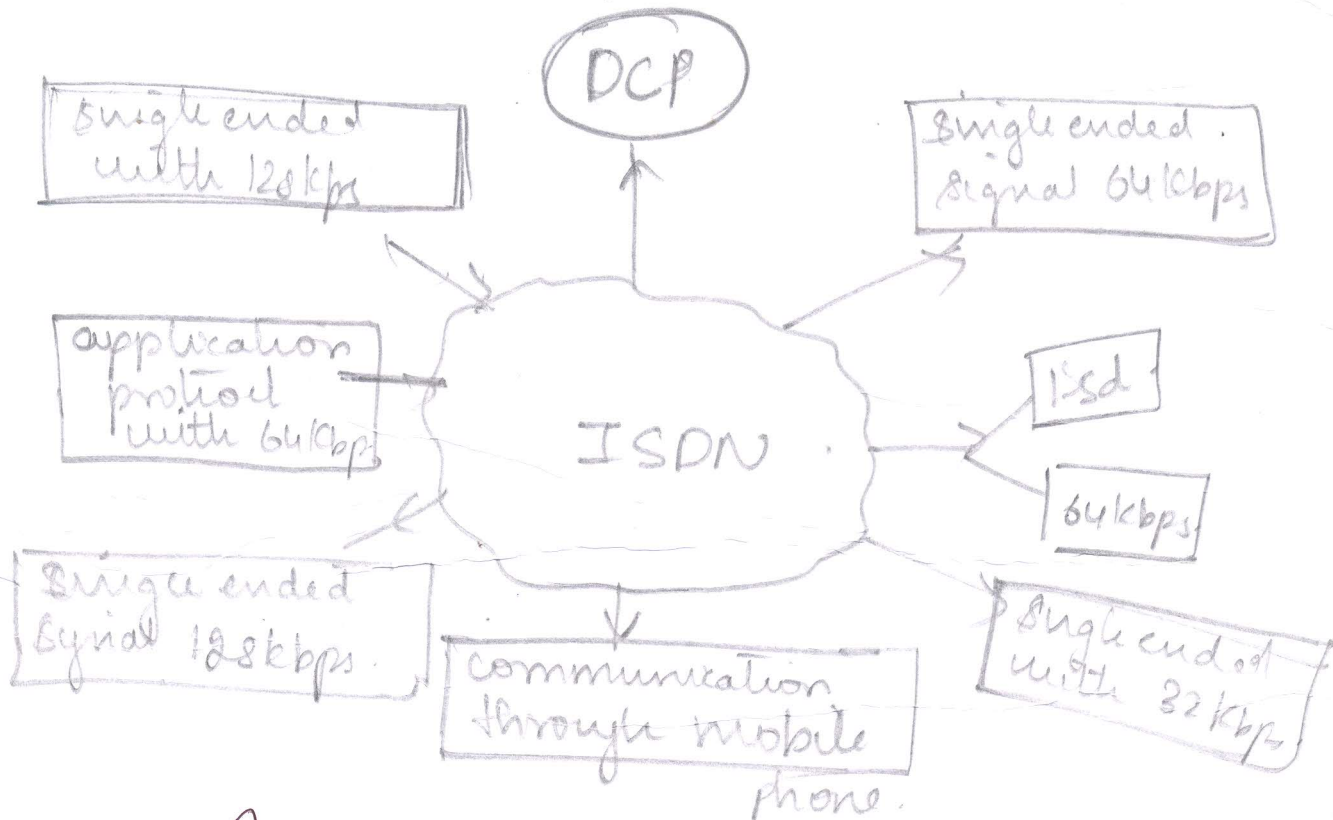
a)



Broadcast Television N/w.

- The broadcast Television N/w is nothing but spreading the n/w in a wide range of space.
- The broadcast n/w are used mainly with the help of cables for the long distance commⁿ.
- The "Setup box" is also used which means it stores all the data and then can be used whenever needed.
- It is been specially used in business areas and homes for personal & private use.
- The boardcast n/w can be formed as the signal from the PSTN is send to the cable headend and then with help of Internet it is been broad - cased.

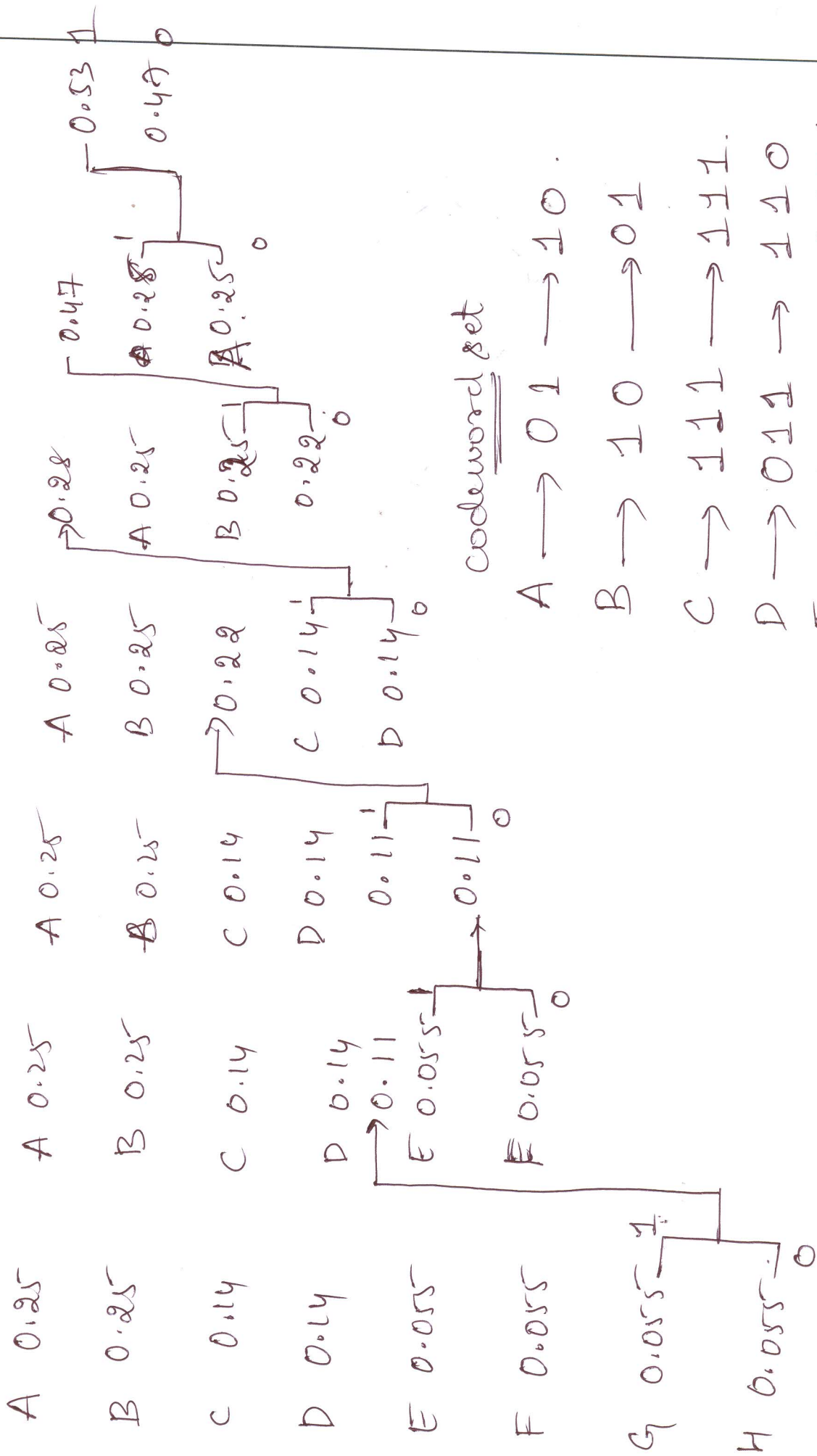
b) Integrated Service digital n/w :-



Integrated Service digital n/w .

- The ISDN is the wide range of the n/w combine .
- It is type of integrated digital n/w .
- Hence the services may vary from the higher level to lower level bits .
- Single ended user can be using 128kbps or 64kbps .
- The communication can happen through mobile and which will be helpful for the society .

(5)



A \rightarrow 01 \rightarrow 10.

B \rightarrow 10 \rightarrow 01

C \rightarrow 111 \rightarrow 111.

D \rightarrow 011 \rightarrow 110

E \rightarrow 1000 \rightarrow 0001

F \rightarrow 0000 \rightarrow 0000.

G \rightarrow 1100 \rightarrow 0011.

H \rightarrow 0100 \rightarrow 0010.

Code tree

