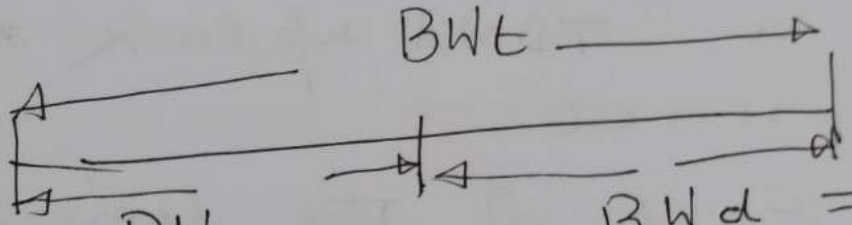
2. Time DIVISION Multiple Access (TDMA)

- (i) TDMA/FDD
- (ii) TDMA/TDD

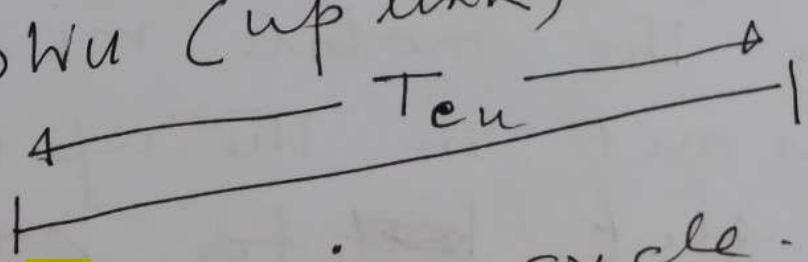
(i) TDMA/FDD (Frequency Division Duplexing)



- (a) FDD done by using BWu and BWd.

UPLINK CHANNEL CREATION. (Mobile to Base station)

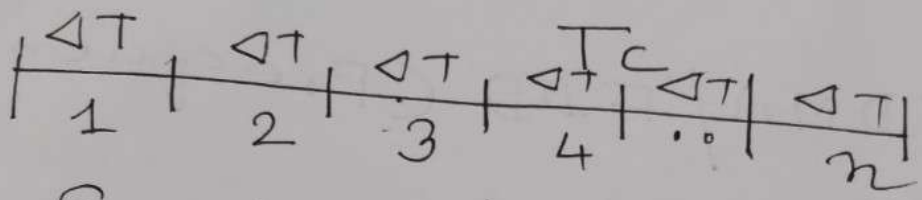
- (b) BWu (up link)



- (c) Tc = Time cycle.

(d) T_c is divided into n number of Time slots each with duration ΔT

$$n = \frac{T_c}{\Delta T}$$



(e) Each time-slot 1 . . n is a TDMA uplink data/voice channel.

(f) Each of the timeslot sho operate on full uplink frequ BWu

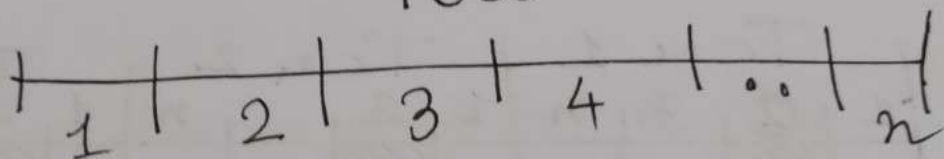
— say mobile m_i is given an uplink channel say '7 then the mobile m_i shou transmit in the uplink time slot for ΔT du

uplink Page-03 Page-02
Here Time divided but uplink freq
not divided.

(g) In case of FDMA/FDD
If a mobile mi is allocated
an uplink channel 7, then
mi mobile shall talk in the
uplink frequency slot 7 but all
the time.
— Here uplink frequency is
divided but time not divi

DOWN LINK CHANNEL CREA
(Base station to Mob

(i) $T_{cd} = T_{cu}$



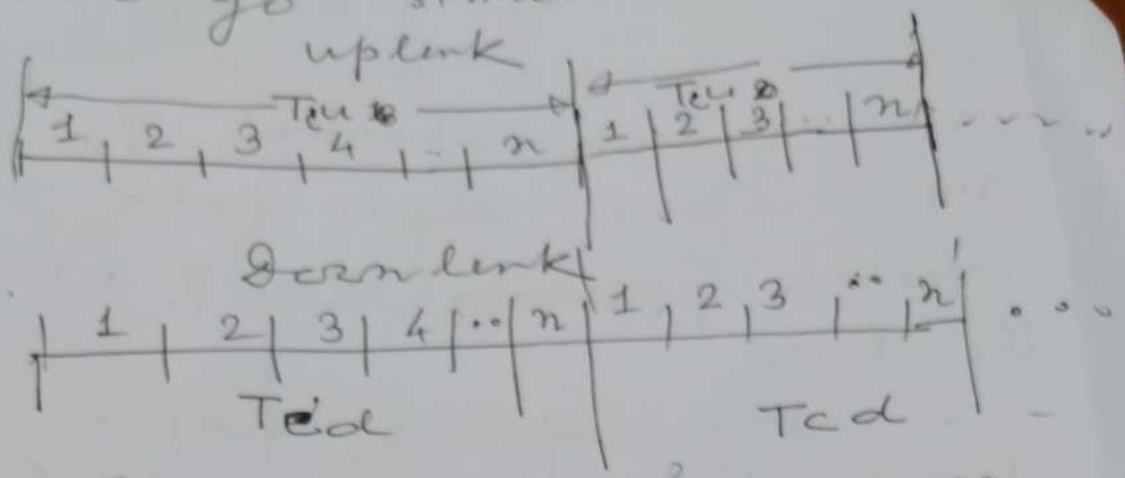
Each time slot $= \Delta T$

$$n = \frac{T_d}{\Delta T}$$

(j): Page-02
(e) change uplink by down

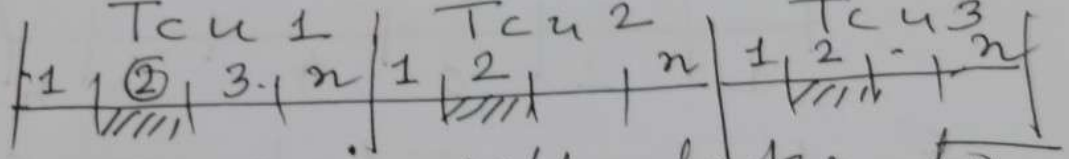
(k) (f) change uplink by down
change transmit by re

(ii) uplink and downlink shall go simultaneously



(iii) So channels here are dis-continuous in time

Suppose mi mobile is allocated an uplink channel (2)



When ever mi will like to transmit it will transmit in uplink slot (2) (shadded) of Tcu1, Tcu2, Tcu3 ... Each time for ΔT time for using the whole uplink freq BW

(k) If we assume each time not only 8 bit is transmitted then to give continuous effect of second, time distance between two consequtive end slot should be $T_{cu} = 125$ micro second according to my quest criterion. 4Hz → 8000 samples per second / Each frame

$\frac{1}{8000}$ sec = 125 μsec. = 8 b

(o) Similarly for ~~upto~~ downlink channel

(m) Change@uplink by downlink Assuming downlink channe allocated is also 2.

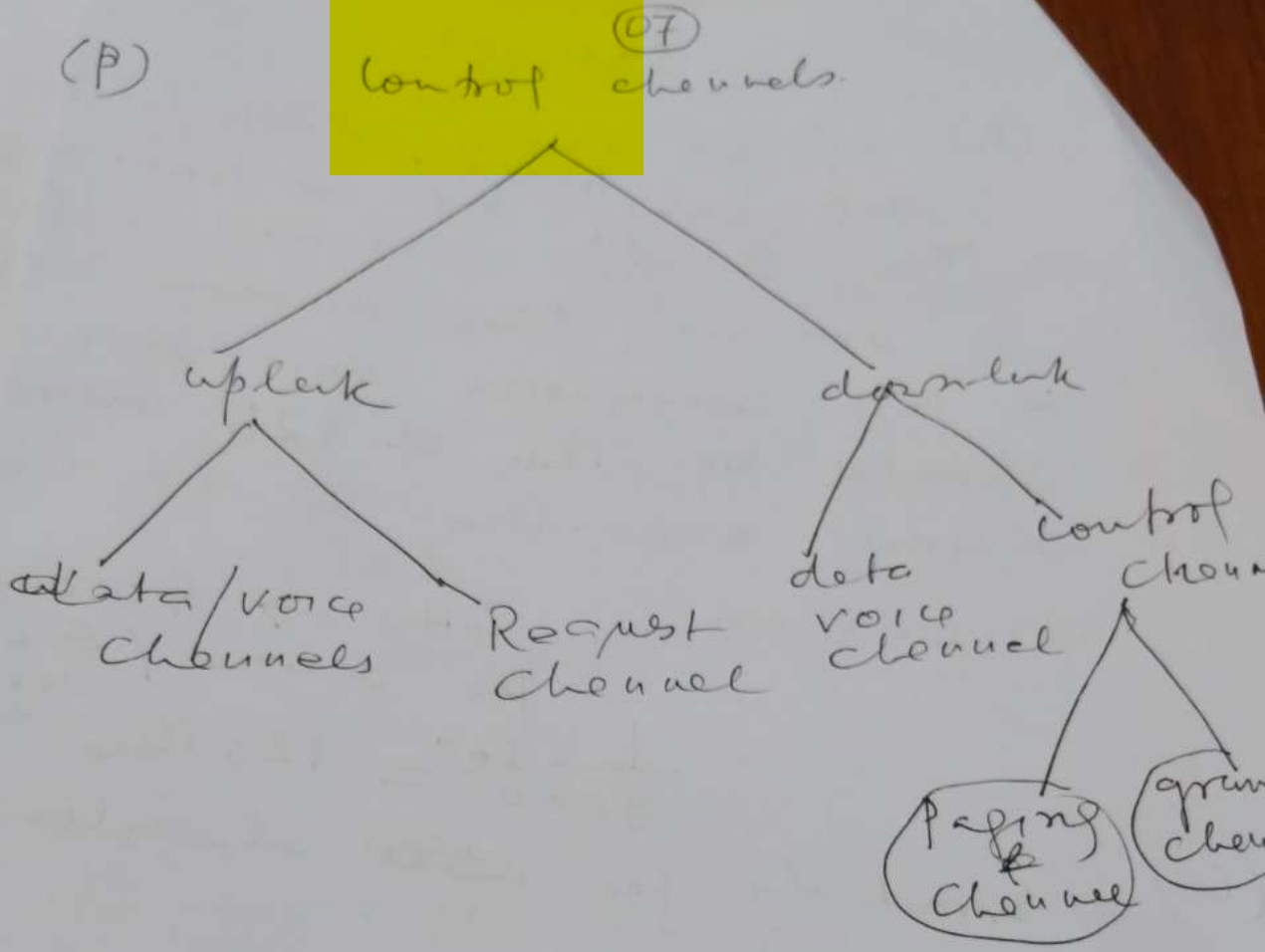
(b) Transmission by reception

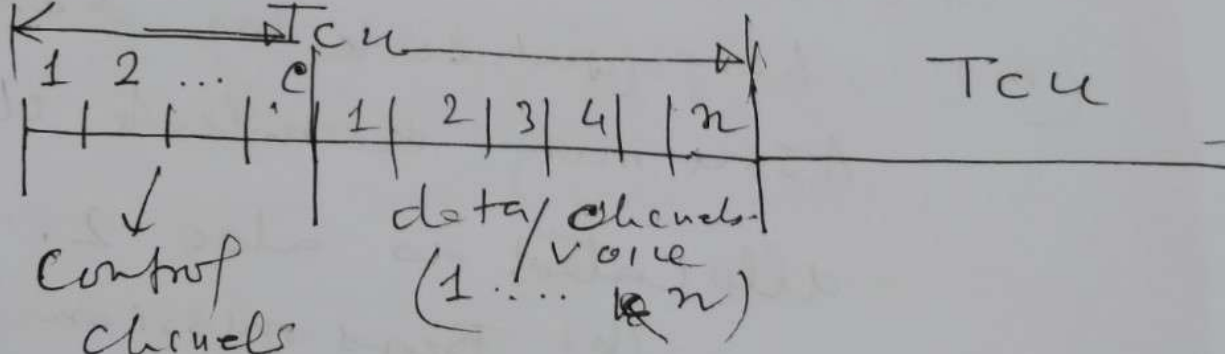
(c) T_{cu} by T_{cd}.

(d) BW_u by BW_d.

(P)

(07)





- Control channel time slots < data/voice channel time slot ⇒ M
- during the Mini Control slot transmission / Reception takes place using whole BW.

(v) Similarly for downlink control channels.

(vi) Call set up same as FDMA/FDD