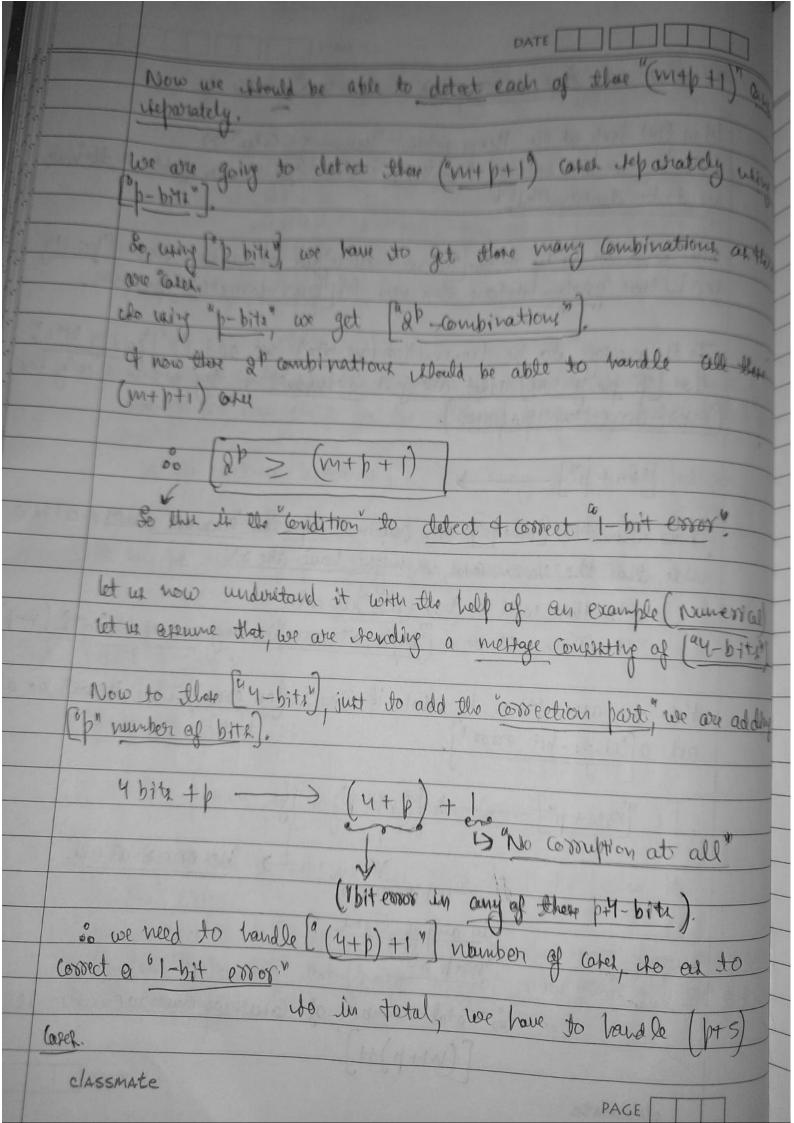
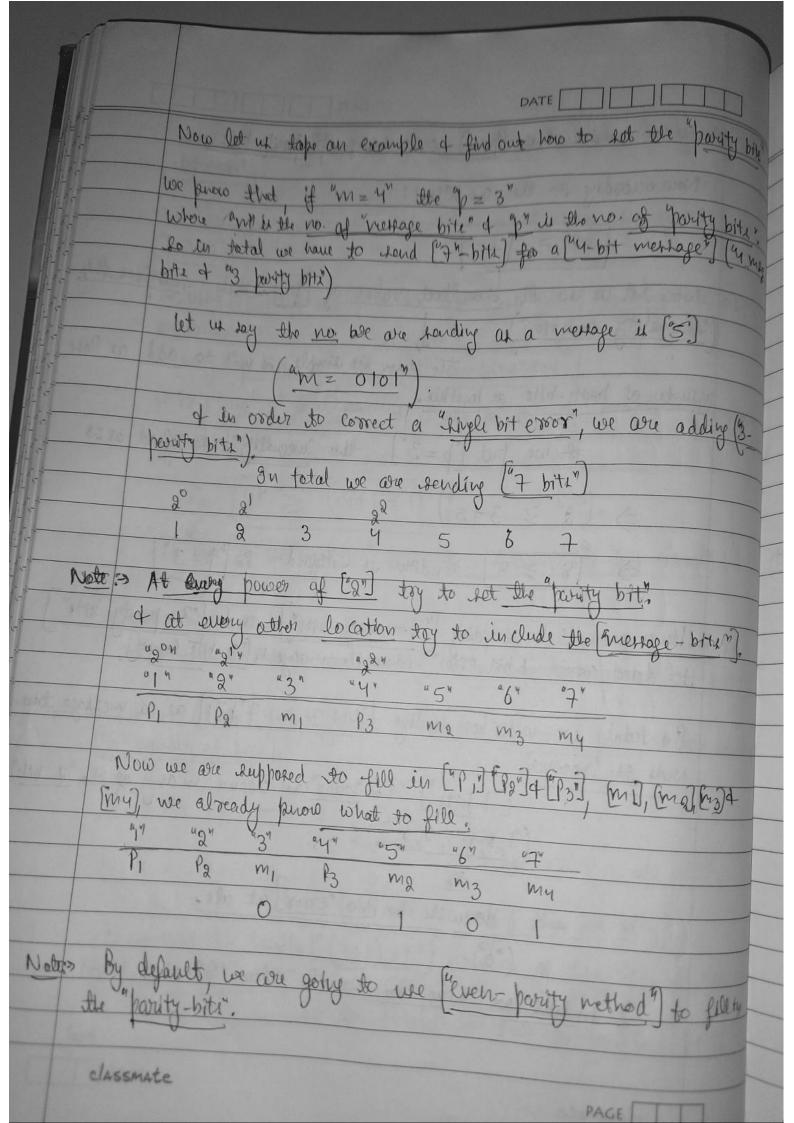
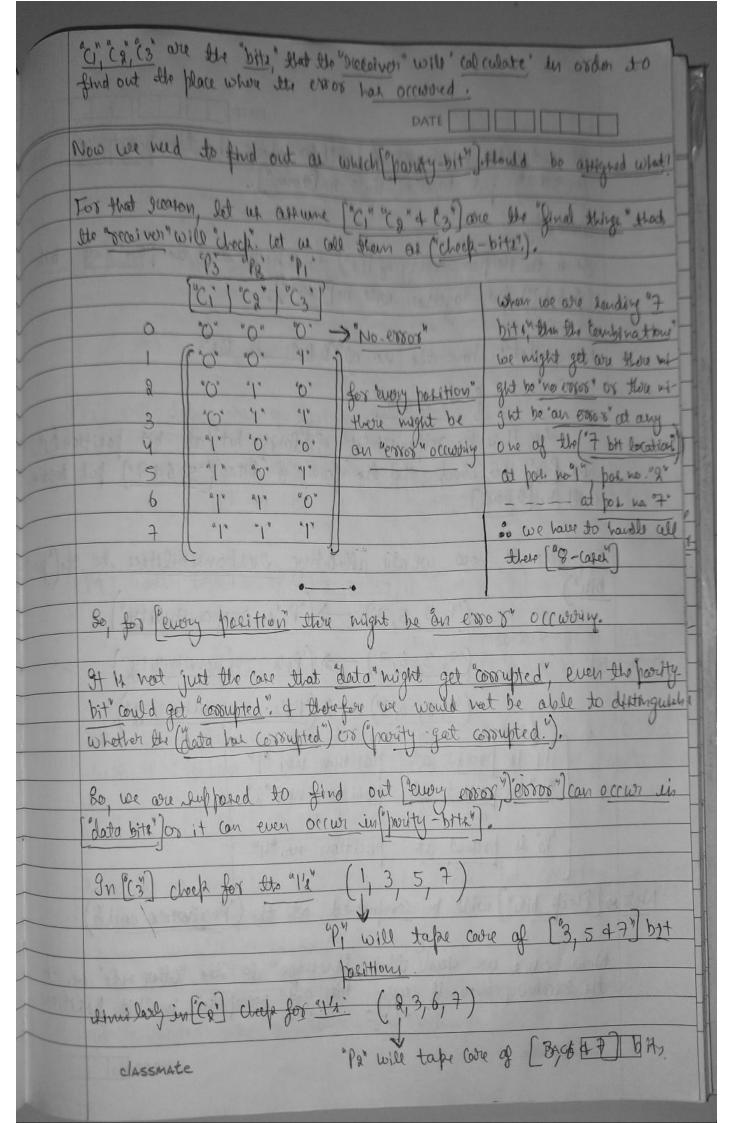


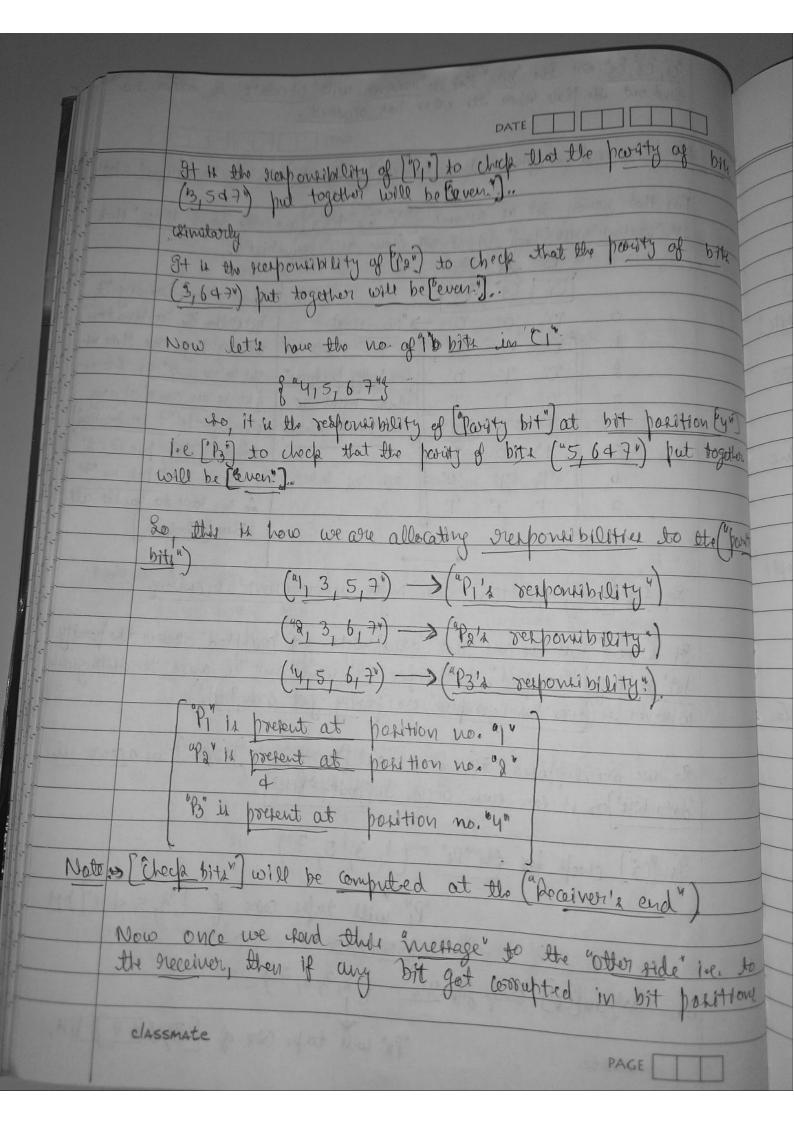
Let us see how done it work is
let us first look at the throng behind "Hamming - codes" "> let us say, we are sonding "m- hts" where Fingle the new of how in the investage to be transmitted".
Now what we do is to the "actual nurseage" we are adding some "posity bits" of their posity - bits "are then used for ["Error-Correction") purposes.
To the metage to be transmitted ("m-bite") we add ("p") parity bite". there ("p" parity bite) added one just "redundant" of they are used only for ("error-correction purposes.").
$[am+b^m]$
Now when this ["M+p"] bits duccived by the "receiver" on the other
Aide, then the Various Cares, we might have are:
1> There will be the error lat all.
as There will be a ("Single-bit error lin any one of the bit! (MHP)
Here over assumption is that, if those is ("on error") then it will be almost a ["ringle-bit error."].
net a Carinoli - but escori)
and a straight of
$["m+p"] \longrightarrow g(m+p)+1g$
The state of the s
up-bit error atall.
in any of there
in any of black
a lange to consider 12
so Total rumber of Cases we have to consider is
[(M+p)+1]. PAGE TIPTO
classmate



dage (our bound), or or
of we can handle there (pt 5) caree veing "p" pointy bits.
Now according to the condition;
18p > p+s
Now let up see the smallest value of [pm] which sollinger they. ["sinequality and tron").
The reasons is sample use mood to add as and
number of posity-bits as possible.
if we put ["p = 3"] this "inequality" is satisfied as:
$\Rightarrow (2^3 \ge 3 + 5^4)$
F Competition of the second of
⇒ 8° Condition in fathfled so [1=3"]
Hence we will be fonding ["4-message-bits"] and ["3-parity bits"] = to detect [correct "1 bit error" when the message 12 ["4-bits long"].
In total we will be dending ["M+3 = 7" bits] as a mestage tow.
and Al Ma "Granings".
["7-bits] (50 "error" can occur in any of the I bits)
(1, 2, 3, 4, 5, 6, 7)
thousill be two error at all.
thought be the cool at the
(*6").
of gn total we have to handle they "gn caper,
PAGE TI







("1;"3;"5;"7") than the "parity" will charge. Tipewike we cay even day about ["po"] of ["po"] of ["po"].
[Pi') will take carce of (bit positions") ("3", "5" 80 "7").
P1 3" 5" 7" Now in order to make it leaves - 1 pointy") [P1 = "0"].
[Ps"] will take care of ("bit-positions") ("3", "6" & "7").
Pg 3" 6" 7" Now in order to mape it (even + poraty) [Pg Juill be set to[1].
[P3] will take core of (bit-possitions) ("5", 6" & "7"). P3 "5" 6" "7" Now in order to make it ("even-"=" [P3] will be set to [0].
Even though the message that use law to "transmit" in ("0101") which is [5] in "BCD", we will be stending often the painty bits u. P. P. P. M. P. M. M. M. M. 25 (0100101)
Now let us fee how will this be useful in correctly the "errors!" Let us see what happens :> (0 1 0 0 1 0 1) (0 1 0 0 1 0 1)
get converted into "o" as shown below:

