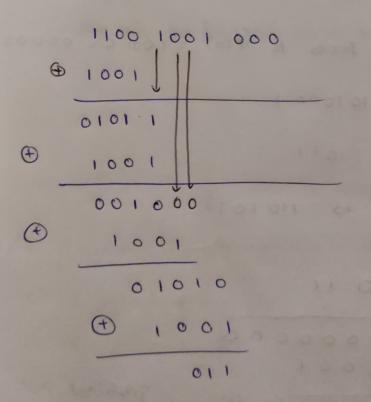1)

Message : 1100100 1

CRC polynomial : $x^3 + 1 = 1 \cdot x^3 + 0 \cdot x^2 + 0 \cdot x^1 + 1 \cdot x^0$

CRc generator : 1 0 0 1

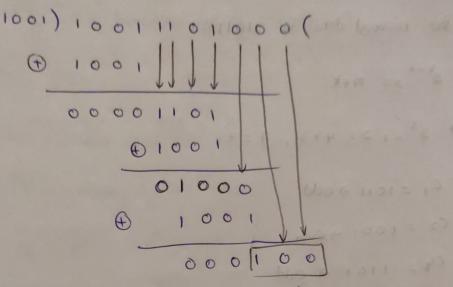Since polynomial is of order '3' append 3 0's at the
end of msg

Message : 1100100 1000

```
   1100 1001 000
 ⊕ 1001 ↓
 ─────────────────
   0101 1
 ⊕  1001
 ───────────────
   001 0 00
 ⊕   1001
 ─────────
     01010
 ⊕    1001
 ─────────
      011
```

Transmitted msg: 1100100 1011

a]

Generator Polynomial $= x^3 + 1$

$= 1 \times x^3 + 0 \times x^2 + 0 \times x^1 + 1 \times x^0 = 1001$

So, we append three 0's at the end of msg

```
1001) 1 0 0 1 1 1 0 1 0 0 0  (
  ⊕  1 0 0 1
     ――――――
     0 0 0 0 1 1 0 1
        ⊕ 1 0 0 1
          ――――――
          0 1 0 0 0
           ⊕ 1 0 0 1
             ――――――
             0 0 0 1 0 0
```

y Non-Zero remainder
indicates error

Remainder = 100

The msg transmitted = 100111 01100

The 3rd bit from left gets inverted. So receiver recieves

101111011 00