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Subject : Analysis of Algorithms (AOA)
Assignment-06

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Paper

Assignment No-06

Q.1) Write the Algorithm for Rabin Karp string matching

→ Algorithm Rabin Karp (T[1...n], P[1...m, d, q])

Problem description: The Algorithm is for "matching the pattern using Rabin Karp.

```
h ← pow(d, m-1) mod q ← high order
p ← 0
fin ← 0
    for (i ← 1 to m) {
        p ← (dp + P[i]) mod q
        to ← (dto + T[i]) mod q
    } O(m) time
}
for (S ← 0 to n-m)
  {
    if (p = to) then
{   if (P[1..m] = T[S+1 : S+m]) then
    write ("Pattern found with shift", S)
}
    if (S < n-m)
      ts+1 ← (d(to - T[S+1]h) + T[S+m+1])
} //end of for
} // end of Algorithm.
```


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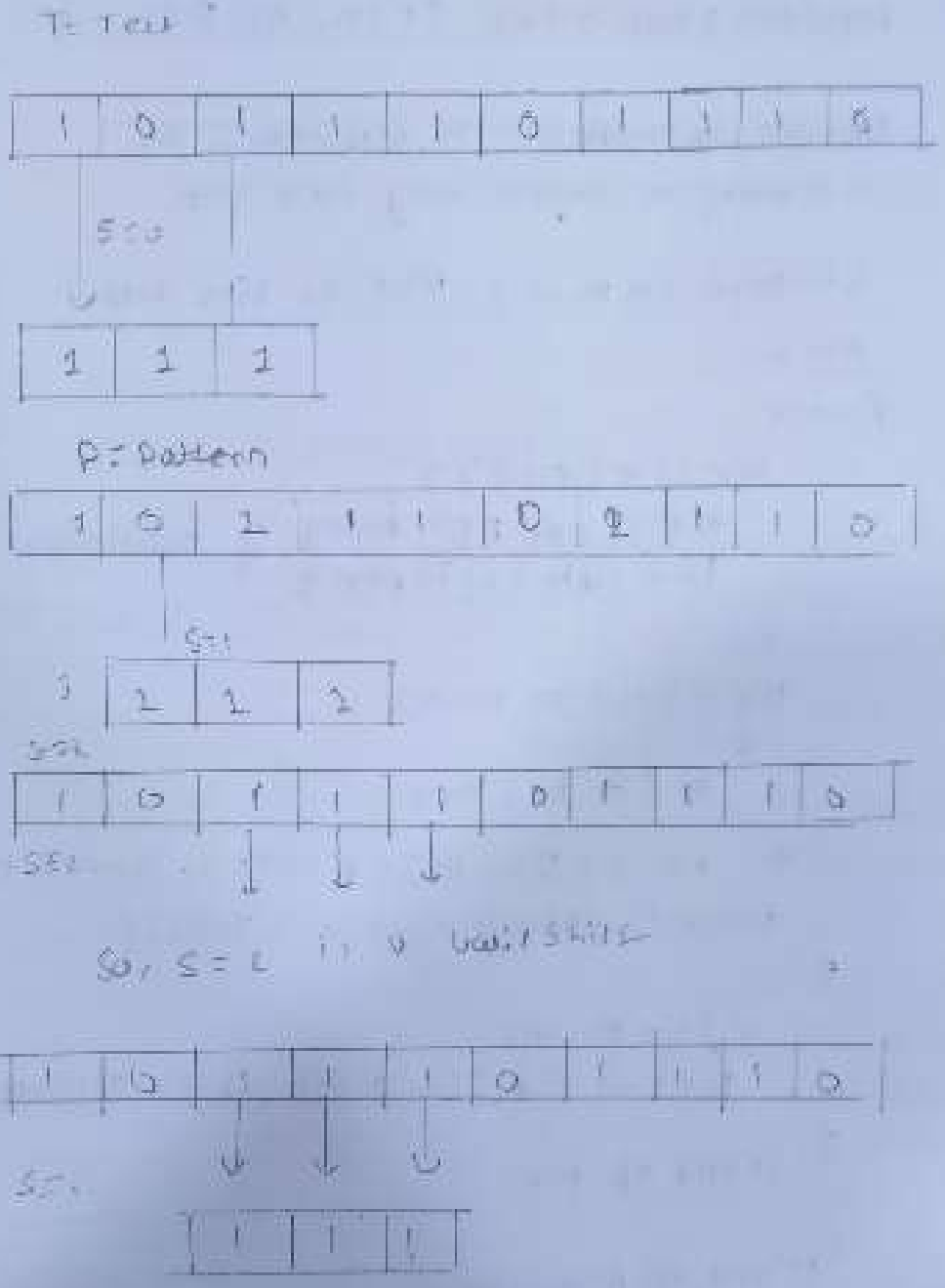
Q 2) Suppose T = 1011101110 P = 111 find all the valid shift using naive string - matching algorithm.

Soln



So, s = 2 is a valid shift.

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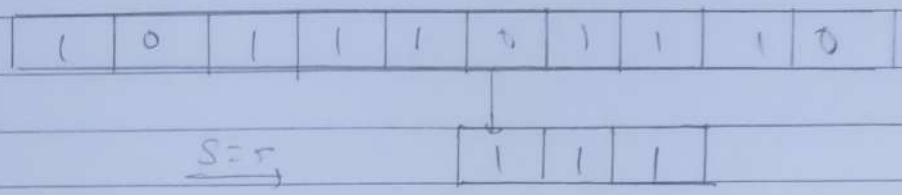
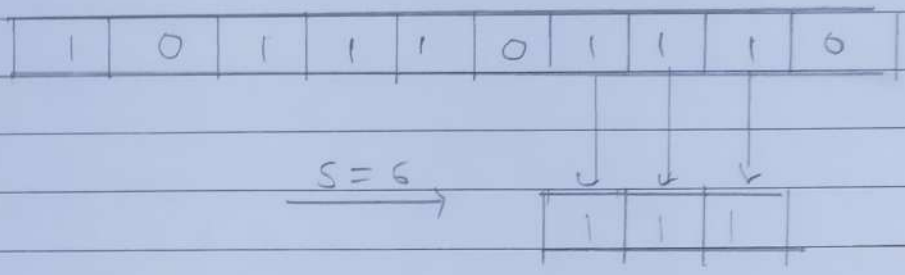
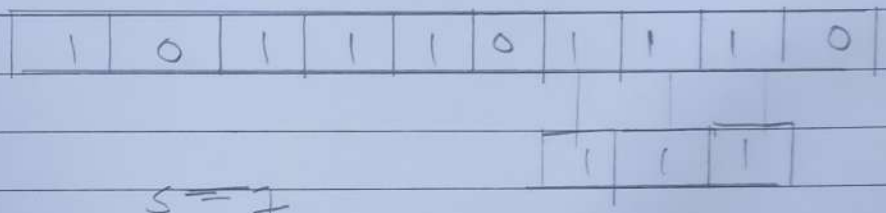




So S=6 is a valid shift



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