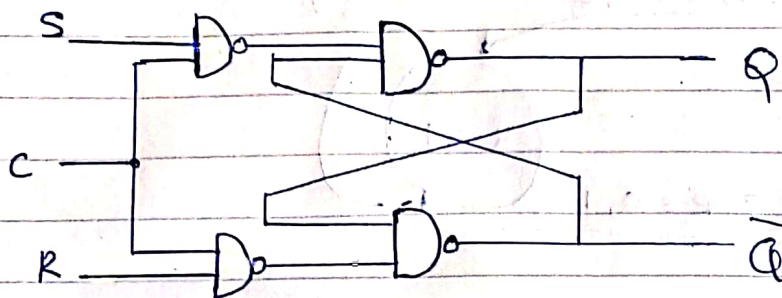
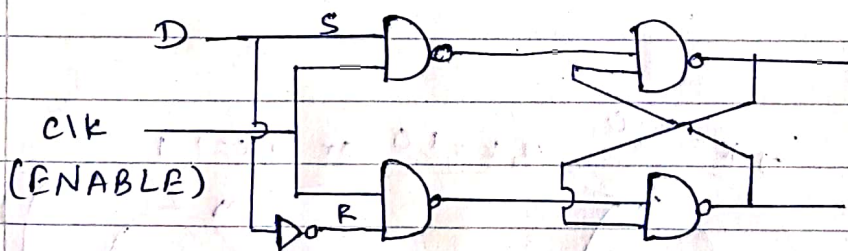


(01) a)



| S | R | Output ($Q(t+1)$) |
|---|---|----------------------|
| 1 | 1 | no change ($Q(t)$) |
| 0 | 1 | $Q = 1$ |
| 1 | 0 | $Q = 0$ |
| 0 | 0 | Invalid |

b)



| (EN) CLK | D | Output ($Q(t+1)$) |
|-------------|---|----------------------|
| 0 | X | No change ($Q(t)$) |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

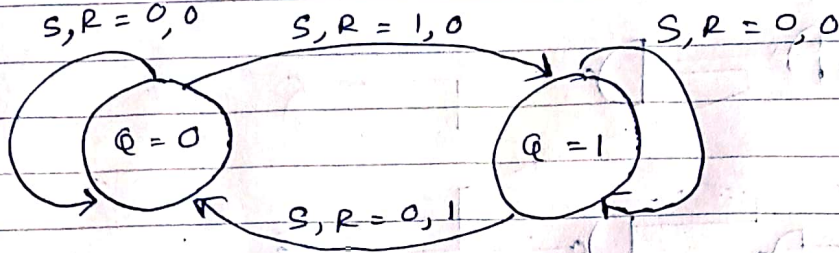
Date

No

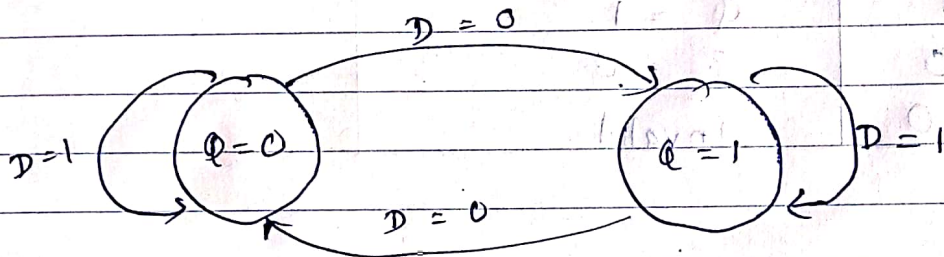
SR flip-flop

02

a) i)

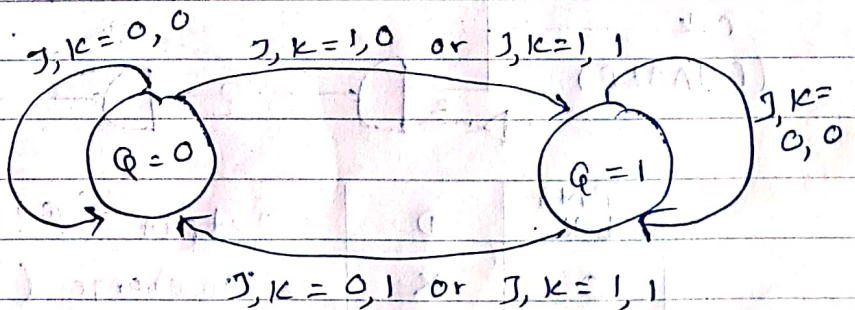


ii) D flip-flop



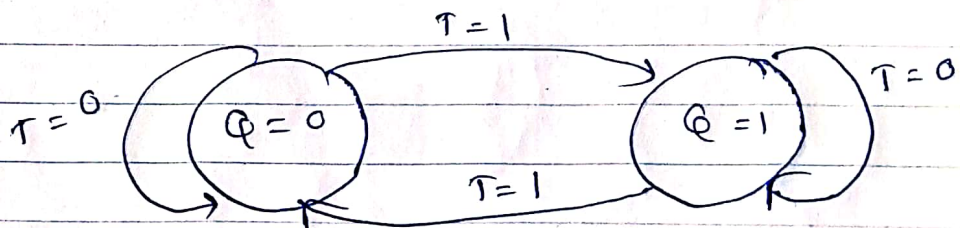
iii) JK Flip-flop

| J | K | Q(t+1) |
|---|---|--------|
| 0 | 0 | Q(t) |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | Q'(t) |

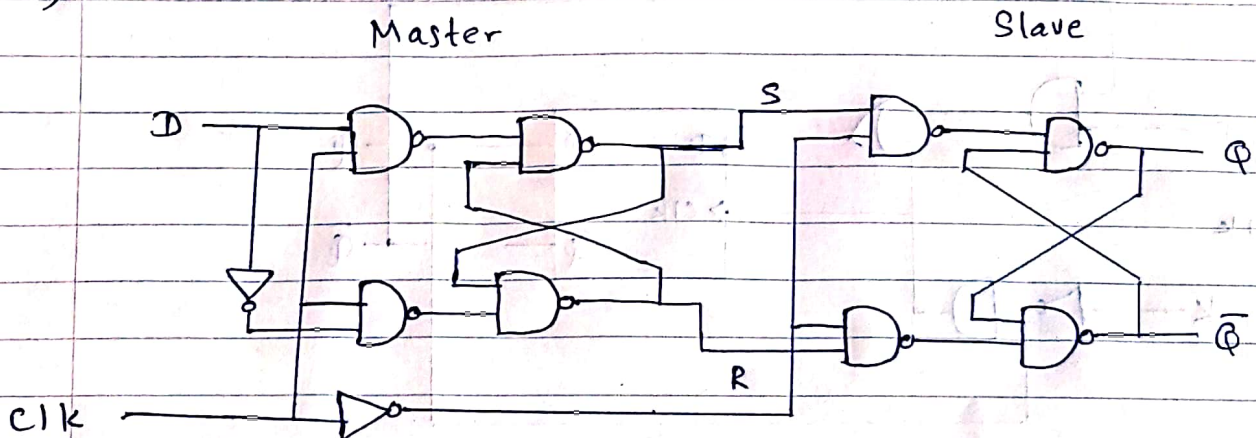


iv) T Flip-flop

| T | Q(t+1) |
|---|--------|
| 0 | Q(t) |
| 1 | Q'(t) |

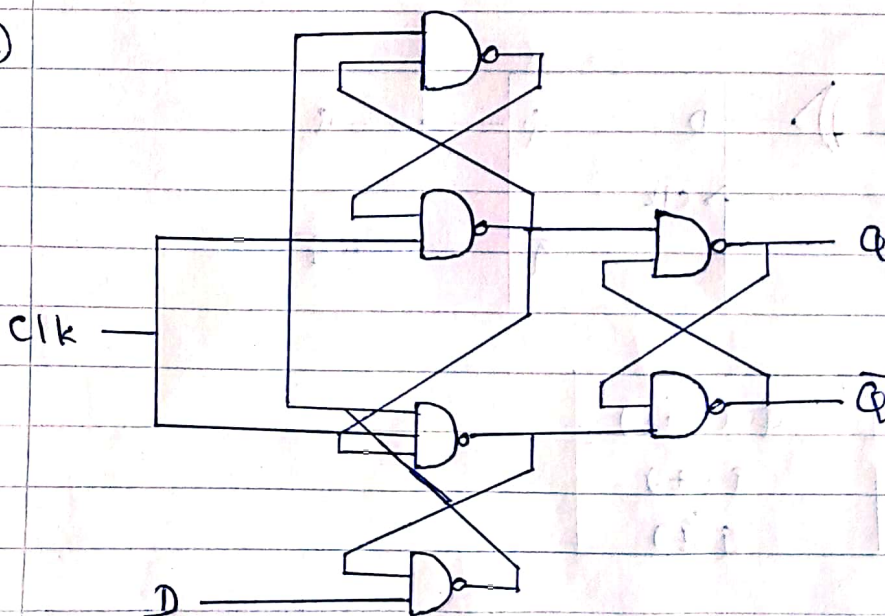


b)

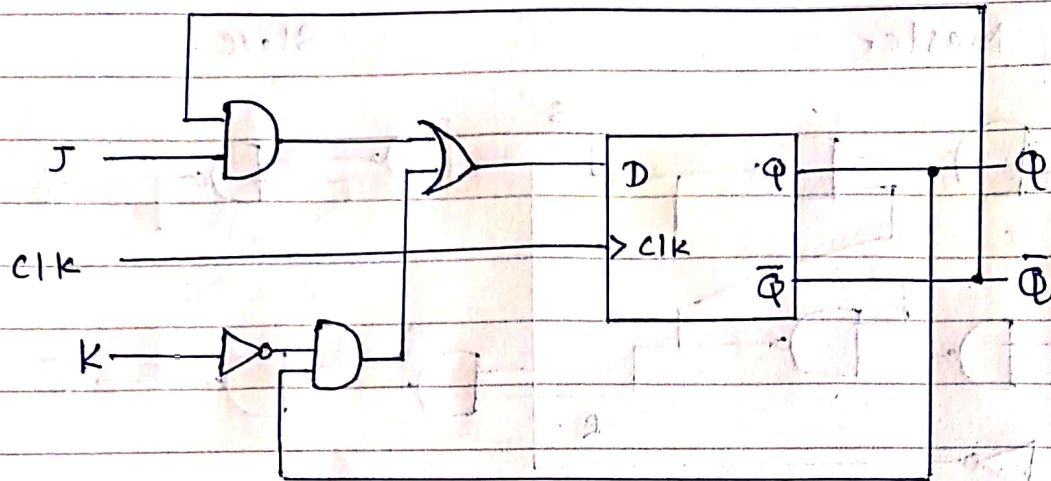


| CIK | D | $Q(t+1)$ |
|-----|---|--------------------|
| 0 | 0 | $Q(t)$ (No change) |
| 0 | 1 | $Q(t)$ (No change) |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

c)

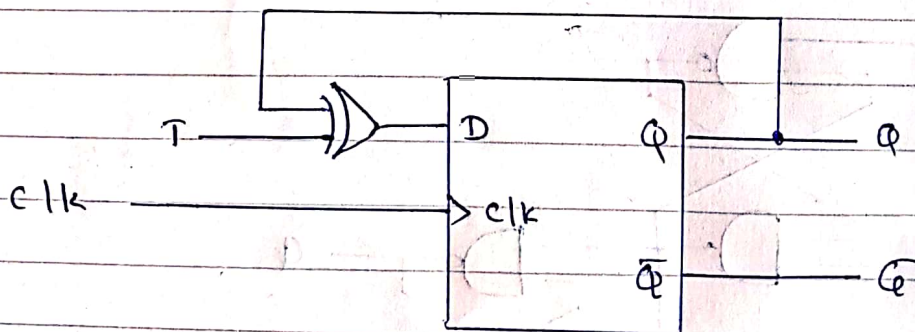


d)



| J | K | $Q(t+1)$ |
|---|---|----------|
| 0 | 0 | $Q(t)$ |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | $Q(t)'$ |

e)



| T | $Q(t+1)$ |
|---|----------|
| 0 | $Q(t)$ |
| 1 | $Q'(t)$ |