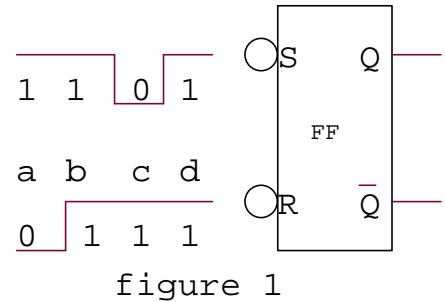


Flip Flops Pretest

- The basic building block for sequential logic circuits is the _____.
- List all Asynchronous flip-flops covered in this chapter: _____
- List all Synchronous flip-flops covered in this chapter: _____

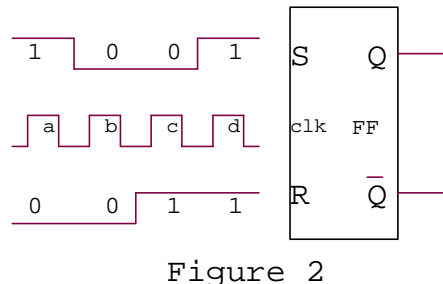
Refer to Figure 1 for **questions 4-11**.



- During pulse a of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- During pulse b of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.

- During pulse c of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- During pulse d of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- The FF is in the *set* mode of operation during pulse(s) _____ (list all that apply).
- The FF is in the *reset* mode of operation during pulse(s) _____ (list all that apply).
- The FF is in the *hold* mode of operation during pulse(s) _____ (list all that apply).
- This FF is called a _____ flip-flop.

Refer to Figure 2 for **questions 12-19**.



- During pulse a of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- During pulse b of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- During pulse c of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- During pulse d of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
- The FF is in the *set* mode of operation during pulse(s) _____ (list all that apply).
- The FF is in the *reset* mode of operation during pulse(s) _____ (list all that apply).
- The FF is in the *hold* mode of operation during pulse(s) _____ (list all that apply).
- This FF is called a _____ flip-flop.

Refer to Figure 3 for **questions 20-27**.

20. During pulse a of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
21. During pulse b of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
22. During pulse c of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
23. During pulse d of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
24. During pulse e of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
25. Which of the inputs are asynchronous inputs to this FF: _____
26. The flip-flop is in asynchronous mode of operation during pulse(s) _____ (list all that apply).
27. This flip-flop is called a _____ flip-flop.

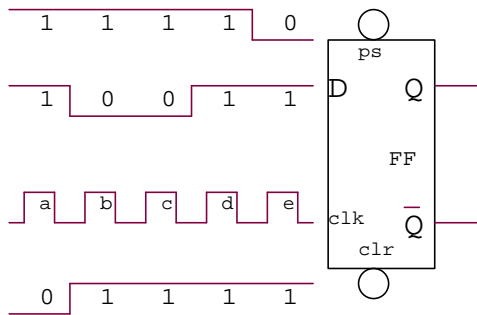


Figure 3

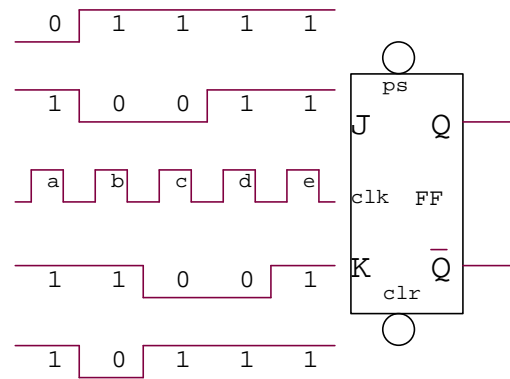


Figure 4

Refer to Figure 4 for **questions 28-38**.

28. During pulse a of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
29. During pulse b of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
30. During pulse c of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
31. During pulse d of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
32. During pulse e of the FF, output Q is at logical _____ & output \bar{Q} is at logical _____.
33. This flip-flop is called a _____ flip-flop.
34. The mode of operation at the end of pulse a is _____.
35. The mode of operation at the end of pulse b is _____.
36. The mode of operation at the end of pulse c is _____.
37. The mode of operation at the end of pulse d is _____.
38. The mode of operation at the end of pulse e is _____.

39. A FF in the Reset mode produces a logical _____ at Normal output Q and a _____ at \bar{Q} .
40. A FF in the Set mode produces a logical _____ at Normal output Q and a _____ \bar{Q} .
41. A FF in the Prohibit produces a logical _____ at Normal output Q and a _____ \bar{Q} .
42. A FF in the Toggle mode produces a _____ at Normal output Q and a _____ \bar{Q} .