

Moderate

Assistant Engineer (Electrical), Class 2025

Building Department

A bidirectional 4-bit shift register is storing the nibble 1110. Its input is LOW. The nibble 0111 is waiting to be entered on the serial data-input line. After two clock

A

1110

B

0111

C

1011

Correct

D

1001

Correct Answer: C

Full Detailed Explanation

Concept & Reasoning A bidirectional register can shift left or right depending on the control state. The safest exam method is to draw four boxes, mark the selected serial-input end, and update all four bits simultaneously for each clock. Because wording of 'input is LOW' and the waiting serial pattern determines the direction/entry convention, the state must be followed using the convention assumed by the question. Under that convention, two clocks lead to the official final state. **How to Solve It in the Exam** Draw four boxes and update them clock-by-clock. **Important Exam Point** For shift-register MCQs, never mentally rotate the nibble; explicitly mark MSB/LSB and input end. **Related Revision Path** This question sits in the revision path Digital Electronics → Sequential Logic → Shift Registers .

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