

Practice Quiz 11

1. The **five-bit** sign and magnitude number $SM(10101)_2$ converted to **radix** notation is:

- (A) $R(10101)_2$
 (B) $R(01010)_2$
 (C) $R(10110)_2$
 (D) $R(11011)_2$
 (E) none of the above

$$-(0101)_2 \rightarrow \text{radix}$$

$$R(11011)_2$$

2. The **five-bit** diminished radix number $DR(10101)_2$ converted to **radix** notation is:

- (A) $R(10101)_2$
 (B) $R(01010)_2$
 (C) $R(10110)_2$
 (D) $R(11011)_2$
 (E) none of the above

$$-(1010)_2 \rightarrow \text{radix}$$

$$R(10110)_2$$

3. The **five-bit** radix number $R(10101)_2$ extended to **eight bits** is:

- (A) $R(00010101)_2$
 (B) $R(10000101)_2$
 (C) $R(11110101)_2$
 (D) $R(11101010)_2$
 (E) none of the above

sign extension \rightarrow replicate sign bit

4. When **adding** the **five-bit** signed numbers $(10111)_2 + (11001)_2$ using **radix arithmetic**, the result obtained is:

- (A) $(00000)_2$
 (B) $(10000)_2$
 (C) $(11111)_2$
 (D) overflow (invalid result)
 (E) none of the above

$$\begin{array}{r} 10111 \\ + 11001 \\ \hline 1)10000 \end{array}$$

ignore carry out of sign \rightarrow

5. When **subtracting** the **five-bit** signed numbers $(10111)_2 - (11001)_2$ using **radix arithmetic**, the result obtained is:

- (A) $(11110)_2$
 (B) $(01110)_2$
 (C) $(11111)_2$
 (D) overflow (invalid result)
 (E) none of the above

$$\begin{array}{r} 10111 \\ - 11001 \\ \hline \end{array} \rightarrow \begin{array}{r} 10111 \\ 00110 \\ + 1 \\ \hline 11110 \end{array}$$