

(a - 1

$$\begin{array}{r} 11.11 \\ \times 11.1. \\ \hline \end{array} \quad sc = 5$$

$$\frac{\dots\dots\dots}{Q} \frac{11.1.}{B} \xrightarrow{sc=4} \dots\dots\dots 11.1 \xrightarrow{sc=3} \frac{11.11.11.}{Q} \frac{11.}{B}$$

$$\xrightarrow{sc=2} \frac{\dots\dots 11.11.11}{Q} \xrightarrow{sc=1} \frac{1\dots\dots\dots}{Q} \frac{111.1}{B}$$

$$\xrightarrow{sc=0} \left[\frac{1.1.1}{Q} \frac{1111.}{B} \right] = (V.2)_1$$

$$\begin{array}{r} 1111.1 \\ \times 1.111. \\ \hline \end{array}$$

(b

$$\begin{array}{l} \dots\dots\dots \xrightarrow{1} \dots\dots 111.1 \xrightarrow{2} \dots\dots 111.1. \\ \xrightarrow{3} \dots\dots 1.1.111 \xrightarrow{4} \dots\dots 111.1. \xrightarrow{5} \dots\dots 1.1. \dots\dots \\ \xrightarrow{6} \dots\dots 1.1.111. \xrightarrow{7} \dots\dots 11.1.11 \xrightarrow{8} \dots\dots 111.1. \dots\dots \\ \xrightarrow{9} \dots\dots 1.1. \dots\dots \xrightarrow{10} \dots\dots 1.1. \dots\dots \xrightarrow{11} \dots\dots 1.1.1111 \\ \xrightarrow{12} \dots\dots 1.1.111. \end{array}$$

$$\begin{array}{r} 1.111 \\ \times 1.011 \\ \hline \end{array}$$

C - 1

$$\underbrace{\dots\dots\dots}_Q \underbrace{1.011}_B \underbrace{1}_G \xrightarrow{\dots} \underbrace{\dots\dots\dots}_Q \underbrace{1.011}_B \underbrace{1}_G$$

$$\xrightarrow{1.} \underbrace{\dots 1.011}_Q \underbrace{1.011}_B \underbrace{1}_G \xrightarrow{1.} \underbrace{111.111}_Q \underbrace{11.111}_B \underbrace{1}_G$$

$$\xrightarrow{\dots} \underbrace{1111.111}_Q \underbrace{1111.111}_B \underbrace{1}_G \xrightarrow{1.} \underbrace{\dots\dots 111}_Q \underbrace{1111.111}_B \underbrace{1}_G$$

$$\text{Product} = \underbrace{\dots\dots 11111111}_Q \underbrace{11111111}_B$$

۲ - به بی توان انجام دار . کافیت در تمام مراحل ضرب
 ها رعایت شود و از SAR به جای SHR ~~استفاده~~ شیف استفاده شود .
 برای

$$\begin{array}{r}
 1010 \\
 \times 0111 \\
 \hline
 \end{array}$$

sign extension

$$\begin{array}{c}
 \boxed{1} \quad 1010 \quad 0111 \\
 \text{E} \quad \text{Q} \quad \text{B}
 \end{array}
 \xrightarrow{\text{E:Q:B SAR}}$$

$B_0 = 1$
 $E:Q \leftarrow A$

$$\begin{array}{c}
 1 \quad 1101 \quad 0011 \\
 \text{E} \quad \text{Q} \quad \text{B}
 \end{array}
 \xrightarrow{\text{E:Q:B SAR}}$$

$B_0 = 1$
 $E:Q \leftarrow A$

$$\begin{array}{c}
 1 \quad 1011 \quad 1001 \\
 \text{E} \quad \text{Q} \quad \text{B}
 \end{array}
 \xrightarrow{\text{E:Q:B SAR}}$$

$B_0 = 1$
 $E:Q \leftarrow A$

$$\begin{array}{c}
 1 \quad 1010 \quad 1100 \\
 \text{E} \quad \text{Q} \quad \text{B}
 \end{array}
 \xrightarrow{\text{E:Q:B SAR}}$$

$B_0 = 0$
 $E:Q:B \leftarrow A$

Q : B = Answer