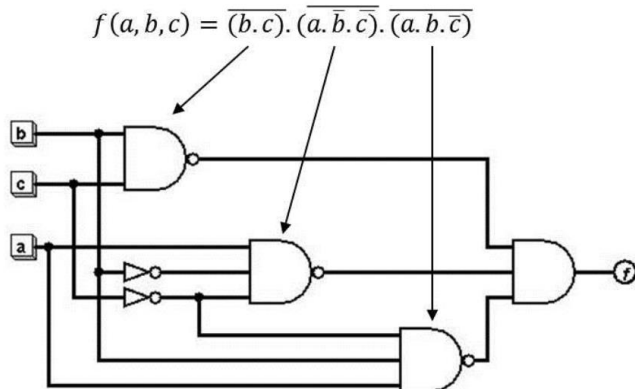


Draw the circuits that directly implement the following Boolean functions (Note: **Do not simplify** the functions before drawing them):

$$1. f(a, b, c) = \overline{b} \cdot \overline{c} \cdot \overline{a} \cdot \overline{b} \cdot \overline{c} \cdot \overline{a} \cdot \overline{b} \cdot \overline{c}$$

$$2. f(a, b, c, d) = a \cdot b \cdot c \cdot d + \overline{a} \cdot \overline{b} + a \cdot b \cdot \overline{c} + a \cdot \overline{b} + a \cdot \overline{c}$$



$$2. f(a, b, c, d) = a \cdot b \cdot c \cdot d + \overline{a} \cdot \overline{b} + a \cdot b \cdot \overline{c} + a \cdot \overline{b} + a \cdot \overline{c}$$

