$$f = \overline{\left(\overline{(\overline{X_1} \vee X_4)(X_5 \vee \overline{\overline{X_2 X_3}})} \right) \left(\overline{(\overline{\overline{X_1} \vee X_3}) \vee \overline{X_1 \overline{X_5}}} \right) \left(\overline{X_3} \vee \overline{\overline{((X_2 \vee X_5)(X_1 \vee \overline{X_2}))}} \right)}$$

$$\left(\overline{(\overline{X_2} \vee \overline{X_4}) \vee X_5} \right) \bigg)$$

$$= \left((\overline{X_1} \downarrow X_4) \downarrow (X_5 \downarrow (\overline{X_2} \downarrow \overline{X_3})) \right) \left(\overline{((X_1 \downarrow X_3) \vee (\overline{X_1} \downarrow \overline{X_5}))} \, (\overline{X_3} \vee (((X_2 \downarrow X_5) \downarrow (X_1 \downarrow \overline{X_2})) \downarrow \right.$$

$$\downarrow \left((\overline{X_2} \downarrow \overline{X_4}) \downarrow X_5 \right) \bigg)$$

$$= \left((\overline{X_1} \downarrow X_4) \downarrow (X_5 \downarrow (\overline{X_2} \downarrow \overline{X_3})) \right) \left((\overline{(X_1 \downarrow X_3)} \downarrow (\overline{X_1} \downarrow \overline{X_5})) \, (\overline{X_3} \downarrow ((X_2 \downarrow X_5) \downarrow (X_1 \downarrow \overline{X_2})) \downarrow \right.$$

$$\downarrow \left((\overline{X_2} \downarrow \overline{X_4}) \downarrow X_5 \right) \bigg)$$

$$= \left((\overline{X_1} \downarrow X_4) \downarrow (X_5 \downarrow (\overline{X_2} \downarrow \overline{X_3})) \right) \downarrow \left(((X_1 \downarrow X_3) \downarrow (\overline{X_1} \downarrow X_5)) \downarrow (\overline{X_3} \downarrow ((X_2 \downarrow X_5) \downarrow \right.$$

$$\downarrow (X_1 \downarrow \overline{X_2})) \downarrow ((\overline{X_2} \downarrow \overline{X_4} \downarrow X_5))) \bigg)$$