The corrected Reactions:
\[
\frac{dx_1}{dt} = 0
\]
\[
\frac{dx_3}{dt} = 0
\]
\[
\frac{dx_8}{dt} = k_x x_8 - k_{f,8} x_8 x_9 + k_{r,8} x_1 + k_{f,7} x_7 x_{10} + k_{r,7} x_{12} - k_{f,9} x_9 x_{15} + k_{r,9} x_{16} - k_{f,21} x_{29} x_8 + k_{r,21} x_{30} +
\]
\[
k_{f,37} x_{39} - k_{r,37} x_8 x_{46} + k_{f,39} x_{40} - k_{r,39} x_{45} x_8 + k_{f,42} x_{44} - k_{r,42} x_{44} x_8
\]
Where \( k_{r,30} x_{45} x_8 \) is changed to \( k_{r,39} x_{45} x_8 \)

\[
\frac{dx_{16}}{dt} = k_{f,9} x_9 x_8 - k_{r,9} x_{16} - k_{f,34} x_{16} + k_{r,34} x_{39}
\]
Where \( k_{f,9} x_{14} x_8 \) is changed to \( k_{f,9} x_{13} x_8 \)

\[
\frac{dx_{36}}{dt} = k_{f,14} x_{13} - k_{r,8} x_{20} + k_{f,8} x_{21}^2 - k_{f,15} x_{23} x_{20} + k_{r,15} x_{27}
\]
\[
\frac{dx_{31}}{dt} = 2k_{r,8} x_{20} - 2k_{f,8} x_{21}^2 - k_{f,15} x_{23} x_{21} + k_{r,15} x_{24} + k_{f,13} x_{24} - k_{f,13} x_{21} x_{22}
\]
\[
\frac{dx_{32}}{dt} = k_{16} x_{28} + k_{13} x_{24} - k_{f,13} x_{21} x_{22} - k_{r,17} x_{22}
\]
\[
\frac{dx_{34}}{dt} = k_{16} x_{27} - k_{r,13} x_{24} + k_{f,13} x_{21} x_{22}
\]
Where \( k_{f,60} \) is changed to \( k_{r,8} \), \( k_{r,60} \) is changed to \( k_{f,8} \), \( k_{f,61} \) is changed to \( k_{r,13} \), and \( k_{r,61} \) is changed to \( k_{f,13} \).

The corrected rate constants:
\[
k_{r,30} = 0.4
\]
\[
k_{r,34} = 0.06
\]
\[
k_{r,44} = 0.001833
\]
\[
k_{r,46} = 0.001833
\]
\[
k_{f,50} = 2.5 \times 10^{-4}
\]
\[
k_{25} = 6.7
\]