Question 26 (12 marks)

Consider the following system at equilibrium:

Fe<sup>3+</sup>(aq) + SCN<sup>-</sup>(aq) 
$$\rightleftharpoons$$
 FeSCN<sup>2+</sup>(aq)  $\Delta H = -ve$   
pale brown colourless deep red

For each of the applied changes after equilibrium is re-established, predict the:

- shift in equilibrium position (left, right or no change)
- rate of the forward reaction compared to the original rate (increase, decrease or no change)
- colour of the reaction mixture.

Change	Shift in equilibrium position (left, right or no change)	Rate of the forward reaction compared to original rate (increase, decrease or no change)	Colour of reaction mixture
The reaction mixture is heated			
A few crystals of FeCl <sub>3</sub> are added			
Water is added to the reaction mixture			
A few drops of concentrated Na <sub>3</sub> PO <sub>4</sub> are added			