

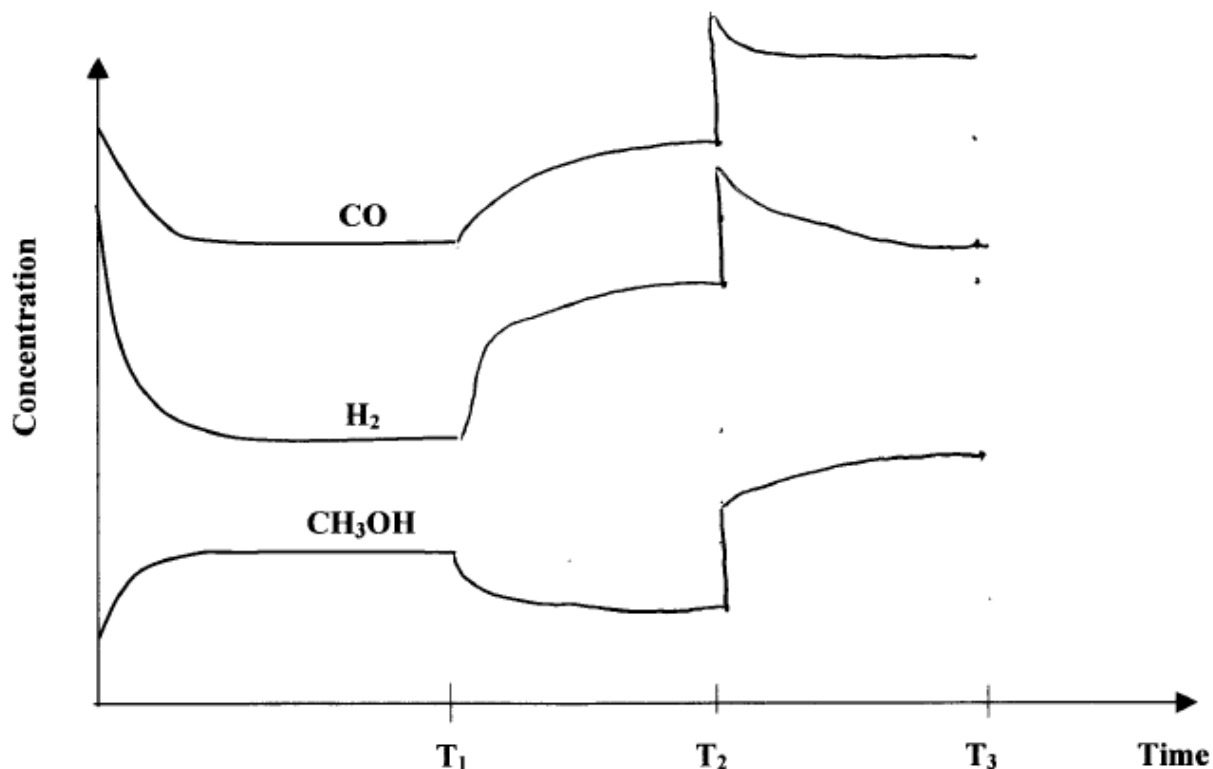
**Question 6 (continued)**

d. At  $T_1$ , an increase in temperature shifts the equilibrium to the left (endothermic reaction).

1 mark

e. At  $T_2$ , an increase in pressure causes an immediate increase in the concentration of all three gases followed by a shift in equilibrium to the right (smaller number of mole).

1 mark



f. The only change in the graph would be that the time taken to reach equilibrium at each stage would be shorter. The equilibrium concentrations would not change.

1 mark

g. 
$$K = \frac{[\text{CH}_3\text{OH}]}{[\text{CO}][\text{H}_2]^2} = \frac{0.2}{0.5 \times 0.3 \times 0.3} = 4.4 \text{ M}^{-1}$$

1 mark