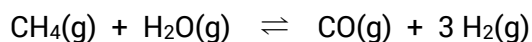


0	1
---	---

Methane is reacted with steam to produce hydrogen and carbon monoxide.

The forward reaction is endothermic.



0	1	.	1
---	---	---	---

What would happen to the amount of products formed, and why, if the temperature was increased?

[3 marks]

(forward reaction is endothermic)

(high temp) favours endothermic reaction

[1]

equilibrium shifts to the right

[1]

more products formed

[1]

0	1	.	2
---	---	---	---

What would happen to the amount of products formed, and why, if the pressure was increased?

[3 marks]

*2 moles of gas on the left, 4 moles on the right or
fewer moles of gas on the left hand side / reactants*

[1]

*(high pressure) favours the direction towards fewer moles of gas / LHS /
backwards direction
or equilibrium shifts to the left*

[1]

less / fewer products formed

[1]

0	1	.	3
---	---	---	---

What would happen to the amount of products formed, and why, if more steam was added, without altering the pressure?

[3 marks]

concentration or number of particles of steam increased

[1]

*favours the forward reaction / direction
or equilibrium shifts to the right*

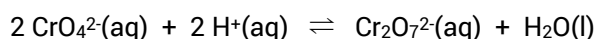
[1]

more products formed

[1]

0	2
---	---

Yellow chromate ions are in equilibrium with orange dichromate ions.



yellow

orange

0	2	.	1
---	---	---	---

What would you observe, and why, if acid was added to a yellow solution of chromate ions?

[3 marks]

(adding acid means) concentration of H⁺ increased

[1]

*favours the forward reaction / direction
or equilibrium shifts to the right*

[1]

colour changes from yellow to orange

[1]

End

(Total 12 marks)