

Reversible reactions and equilibrium

Q1. (2018)

A)

06.2	forward and reverse rates equal		1	AO1 5.6.2.1 5.6.2.3
	because no escape of reactants or products	allow closed system allow particles for reactants or products	1	AO2 5.6.2.1 5.6.2.3

B)

06.3	equilibrium shifts	allow no longer in equilibrium	1	AO3 5.6.2.3
	to right-hand side	allow in favour of forward reaction	1	5.6.2.4 5.6.2.5 5.6.2.7
	to produce more of any products or to reduce any reactants	allow correct references to Le Chatelier's Principle	1	
	(new) equilibrium will be established		1	

Q2. (2019)

A)

05.1	$\text{Mg} + 2\text{H}^+ \rightarrow \text{Mg}^{2+} + \text{H}_2$		1	AO2 5.6.1.2 5.1.1.1
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B)

05.2	electron transfer		1	AO2 5.11
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Q3. (2020)

07.1	when a reversible reaction occurs in apparatus which prevents the escape of reactants and products	allow when a reversible reaction occurs in a sealed system	1	AO1 5.6.2.3
	(equilibrium is reached) when the forward and reverse reactions occur at (exactly) the same rate		1	

Q4. (2021)

A)

06.3	(when) the apparatus prevents the escape of reactants and products	allow (in a) closed system	1	AO1 5.6.2.3
	(and the) forward and reverse reactions occur at same rate		1	

B)

06.4	equilibrium position stays the same	allow no effect	1	AO3 5.6.1.4 5.6.2.3
	increases the rate of the forward and the reverse reaction by the same amount		1	

Q5. (2022)

03.1	sulfur dioxide produced	allow a gas is produced	1	AO3
	(which) escapes from the (conical) flask		1	AO2
				5.2.2.2 RPA11

Q6. (2022)

06.4	(when) the forward and reverse reactions have the same rate		1	AO1 5.6.2.3
	in apparatus which prevents the escape of reactants and products	allow in a closed system	1	

Q7. (2023)

04.4	reversible reaction	allow a reaction that can go both ways	1	AO1 5.6.2.1
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Q8. (2024)

A)

05.1	= 198 kJ/mol		1	AO2 5.6.2.2
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B)

05.6	210 (s)	allow a value in the range 205 to 210 (s)	1	AO3 5.6.2.3
	lines become level / horizontal		1	
	(because) the rates of the forward reaction and reverse reaction are equal or (because) the number of moles (of all three gases) remain constant		1	