

A Level Chemistry B (Salters)
H433/01 Fundamentals of chemistry

The Chemical Industry

Question Set 6

Multiple Choice Questions

1 Which statement about testing for nitrate(V) ions is correct?

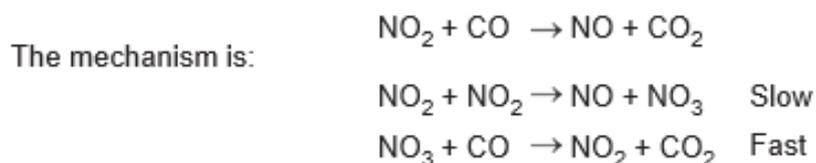
- A They give off ammonia gas when warmed with sodium hydroxide solution.
- B Ammonia is detected because it turns blue litmus paper red.
- C Aluminium is used to reduce nitrate(V).
- D Nitrate(V) ions are oxidised.

Your answer

[1]

2

Nitrogen dioxide reacts with carbon monoxide as in the equation below.



Which expression is the correct rate equation?

- A Rate = $k [\text{NO}_2] [\text{CO}]$
- B Rate = $k [\text{NO}_2]^2 [\text{CO}]$
- C Rate = $k [\text{CO}]$
- D Rate = $k [\text{NO}_2]^2$

Your answer

[1]

3 Which statement about a by-product of an industrial reaction is correct?

- A It is formed in the same reaction as the product.
- B It is formed when the reactants react in a different way.
- C It is in the equation for the reaction.
- D It is a minor reactant in the reaction.

Your answer

[1]

4 Which statement about the rate determining step of a reaction is correct?

- A It is the fast step.
- B It cannot involve a catalyst.
- C It does not involve zero order reagents.
- D It is always between two first-order reagents.

Your answer

[1]

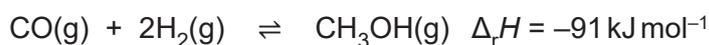
5 Which statement about the Arrhenius equation is correct?

- A A plot of $\ln k$ against T gives a straight line.
- B When T is very large $\ln k$ almost equals $\ln A$.
- C E_a is the gradient of a plot of $\ln k$ against $1/T$.
- D A plot of k against $1/T$ gives a straight line.

Your answer

[1]

6 Which statement about the manufacture of methanol is correct?



- A The best yield of methanol is obtained at high temperature.
- B A catalyst increases the yield of methanol.
- C The pressure used is limited by the cost of energy and machinery.
- D The best yield of methanol is obtained at low pressure.

Your answer

[1]

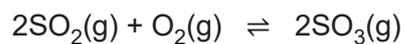
7 Which statement about enzyme catalysed reactions is correct?

- A The rate determining step is always the formation of an enzyme substrate complex.
- B They always speed up at higher temperatures.
- C The rate equation can vary depending on the substrate concentration.
- D They are zero order with respect to enzyme concentration.

Your answer

[1]

- 8 The reaction for the formation of sulfur trioxide is shown below.



60 cm³ of sulfur dioxide are mixed with 60 cm³ of oxygen and allowed to reach equilibrium.

What is a possible equilibrium mixture from this reaction?

	Volume SO ₂ /cm ³	Volume O ₂ /cm ³	Volume SO ₃ /cm ³
A	0	0	120
B	50	55	10
C	48	54	18
D	20	30	40

Your answer

[1]

Total Marks for Question Set 6: 8

OCR

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge