

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

Oceans

Question Set 8

Multiple Choice Questions

1 The maximum solubility of magnesium hydroxide is $1.71 \times 10^{-4} \text{ mol dm}^{-3}$.

What is the value of the solubility product?

- A 5.00×10^{-12}
- B 2.00×10^{-11}
- C 2.92×10^{-8}
- D 5.13×10^{-4}

Your answer

[1]

2 Which statement(s) connected with the greenhouse effect is/are correct?

- 1 The Earth radiates infrared radiation.
- 2 Solar energy heats the surface of the Earth.
- 3 Greenhouse gases absorb ultraviolet radiation causing their bonds to vibrate more.

- A 1, 2 and 3
- B Only 1 and 2
- C Only 2 and 3
- D Only 1

Your answer

[1]

3 Which statement about a strong base at 298 K is correct?

- A It is partially ionised.
- B Its pH is given by $\text{pH} = 14 + \log[\text{OH}^-]$.
- C It will not react with weak acids.
- D It has the same pH as a weak base of the same concentration.

Your answer

[1]

4 What occurs as Group 2 is descended?

- A There is a greater attraction between Group 2 cations and Cl^- ions.
- B The hydration enthalpies of the Group 2 cations become less negative.
- C The charge density of the Group 2 cations increases.
- D The lattice enthalpies of the sulfates become more negative.

Your answer

[1]

5 Entropy values for the combustion of propane are shown below.



Substance	Entropy / $J K^{-1} mol^{-1}$
$C_3H_8(g)$	+269.9
$O_2(g)$	+205.0
$CO_2(g)$	+213.6
$H_2O(g)$	+188.7

What is the entropy change for the combustion of propane?

- A -829.6
- B -72.6
- C +100.7
- D +1125.7

Your answer

[1]

6 A vinegar contains 5.0g of ethanoic acid in each 100 cm^3 of solution and no other acids.

What is the pH of this vinegar?

For ethanoic acid $K_a = 1.7 \times 10^{-5} \text{ mol dm}^{-3}$, $M_r = 60$

- A 2.42
- B 2.92
- C 5.85
- D 6.73

Your answer

[1]

7 Which statement about the greenhouse effect is correct?

- A UV radiation from the Sun increases the vibrational energy of greenhouse gases.
- B The Earth absorbs UV radiation and emits IR radiation.
- C Greenhouse gases absorb UV radiation from the Earth.
- D All gases in the atmosphere contribute to the greenhouse effect.

Your answer

[1]

8 The solubility product of magnesium hydroxide, $\text{Mg}(\text{OH})_2$, is $2.00 \times 10^{-11} \text{ mol}^3 \text{ dm}^{-9}$. What is the solubility of magnesium hydroxide, in mol dm^{-3} ?

- A 3.16×10^{-6}
- B 4.47×10^{-6}
- C 1.71×10^{-4}
- D 2.71×10^{-4}

Your answer

[1]

Total Marks for Question Set 8: 8

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