18.1 Further Aspects of Acids & Bases

Question Paper

Course	DP IB Chemistry
Section	18. Acids & Bases (HL only)
Topic	18.1 Further Aspects of Acids & Bases
Difficulty	Medium

Time allowed: 10

Score: /5

Percentage: /100

Question 1

Which of the following statements is **not** correct?

A. A Brønsted-Lowry base is a proton acceptor

B. Ammonia can act as a Brønsted-Lowry base and Lewis base

C. A Lewis acid is an electron pair acceptor

D. A hydroxide ion can only act as a Lewis base

[1 mark]

Question 2

Which of the following statements are correct for a titration between 0.10 mol dm^{-3} propanoic acid and 0.10 mol dm^{-3} potassium hydroxide?

A. The equivalence point will be at pH 7

B. The salt formed will hydrolyse to form an acidic salt

C. The salt formed will be CH_3COOK

D. At half equivalence point $[CH_3CH_2COOH\ (aq)] = [CH_3CH_2COO^-\ (aq)]$

[1 mark]

Question 3

Which of the following statements about indicators are correct?

I. The pK_a of the indicator is the midpoint of the pH range
II. The colour of the indicator depends upon the pH of the solution
III. At the end point of a titration $[HIn] = [In^-]$

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

[1 mark]

Question 4

Which statement about buffer solutions is **not** correct?

A. A buffer resists small changes in pH

B. A buffer can be formed from sodium hydroxide and an excess of ethanoic acid

C. The pH during a titration between a strong acid and weak base changes slowly in the buffer region

D. When a strong acid is added to a buffer, hydrogen ions react with salt ions

[1 mark]

Question 5

The pH range of four different indicators are:

Indicator	pK_a
Methyl orange	3.7
Phenolphthalein	9.6
Phenol red	7.9
Bromothymol blue	7.0

Which indicator would be suitable for a titration involving hydrochloric acid and ammonia?

A. Methyl orange

B. Phenolphthalein

C. Phenol red

D. Bromothymol blue

[1 mark]