Hydrogen ion concentration- *p*H scale and Buffer solution

121. If the pH of a solution is 4.0 at 25^oC, its pOH would be $(K_w = 10^{-14})$
(a) 4.0 (b) 6.0
(c) 8.0 (d) 10.0

122. An aqueous solution whose OH^- is
(a) Alkaline
(b) Acidic
(c) Neutral
(d) Amphoteric

123. In a solution of acid H^+concentration is $10^{-10}M$. The *pH* of this solution will be
(a) 8
(b) 6
(c) Between 6 and 7
(d) Between 3 and 6

124. The concentration of hydronium (H_3O^+) ion in water is
(a) Zero
(b) $1 \times 10^7 gmion/litre$
(c) $1 \times 10^{-14} gmion/litre$
(d) $1 \times 10^{-7} gmion/litre$

125. A solution whose *pH* value is less than 7 will be
(a) Basic (b) Acidic
(c) Neutral (d) Buffer

126. When the $pH$of a solution is 2, the hydrogen ion concentration in moles per litre is
(a) 1×10^{-14} (b) 1×10^{-2}
(c) 1×10^{-7} (d) pH

127. A base is dissolved in water yields a solution with a hydroxide ion concentration of 0.05 $mollitre^{-1}$. The solution
(a) Basic
(b) Acid
(c) Neutral
(d) Both (a) and (b)

128. The pH of a solution is increased from 3 to 6. Its H^+ion concentration will be
(a) Reduced to half
(b) Doubled
(c) Reduced by 1000 times
(d) Increased by 1000 times

129. Pure water is kept in a vessel and it remains exposed to atmospheric CO_2which is absorbed, then its pH will be
(a) Greater than 7
(b) Less than 7
(c) 7
(d) Depends on ionic product of water

130. The $pH$of a solution is 2. If its pH is to be raised to 4, then the $[H^+]$ of the original solution has to be
(a) Doubled
(b) Halved
(c) Increased hundred times
(d) Decreased hundred times

131. Which of the following solutions cannot act as a buffer
(a) $NaH_2PO_4 + H_3PO_4$
(b) $CH_3COOH + CH_3COONa$
(c) $HCl + NH_4Cl$
(d) $H_3PO_4 + Na_2HPO_4$

132. Assuming complete ionisation, the pH of $0.1MHCl$is 1. The molarity of H_2SO_4 with the same pH is
(a) 0.2 (b) 0.1
(c) 2.0 (d) 0.05

133. The $pH$of blood is
(a) 5.2 (b) 6.3
(c) 7.4 (d) 8.5

134. The pH of 10^{-8} molar aqueous solution of $HCl$is
(a) -8
(b) 8
(c) $6 > 7$ (Between 6 and 7)
(d) $7 > 8$ (Between 7 and 8)

135. As the temperature increases, the pH of a KOH solution
(a) Will decreases
(b) Will increases
(c) Remains constant
(d) Depends upon concentration of KOH solution

136. The hydrogen ion concentration in a given solution is 6×10^{-4}. Its pH will be
(a) 6 (b) 4
(c) 3.22 (d) 2

137. The pH of $\frac{N}{100}$ HCl would be approximately
(a) 1 (b) 1.5
(c) 2 (d) 2.5

138. A solution which is resistant to change of HF upon the addition of an acid or a base is known as
(a) A colloid (b) A crystalloid
(c) A buffer (d) An indicator

139. $10^{-6}MHCl$ is diluted to 100 times. Its $pH$is
(a) 6.0 (b) 8.0
(c) 6.95 (d) 9.5

140. The pH of a 10^{-10} molar HCl solution is approximately
(a) 10 (b) 7
(c) 1 (d) 14