

### Acids and Bases

121. The aqueous solution of  $AlCl_3$  is acidic due to the hydrolysis of  
 (a) Aluminium ion  
 (b) Chloride ion  
 (c) Both aluminium and chloride ion  
 (d) None of these
122. Which shows weak ionisation in water  
 (a)  $H_2SO_4$  (b)  $NaCl$   
 (c)  $HNO_3$  (d)  $NH_3$
123. An organic dye, cosine used to detect end point of precipitation titration by adsorption is called  
 (a) Absorption indicator  
 (b) Adsorption indicator  
 (c) Chemical indicator  
 (d) None of these
124. The indicator used in the titration of iodine against sodium thiosulphate is  
 (a) Starch (b)  $K_3Fe(CN)_6$   
 (c)  $K_2CrO_4$  (d) Potassium
125. Phenolphthalein does not act as an indicator for the titration between  
 (a)  $NaOH$  and  $CH_3COOH$   
 (b)  $H_2C_2O_4$  and  $KMnO_4$   
 (c)  $Ba(OH)_2$  and  $HCl$   
 (d)  $KOH$  and  $H_2SO_4$
126. Which is not example of Bronsted Lowry theory  
 (a)  $AlCl_3$  (b)  $H_2SO_4$   
 (c)  $SO_2$  (d)  $HNO_3$
127. An aqueous solution of sodium carbonate is alkaline because sodium carbonate is a salt of  
 (a) Weak acid and weak base  
 (b) Strong acid and weak base  
 (c) Weak acid and strong base  
 (d) Strong acid and strong base
128. The acid that results when a base accepts a proton is called  
 (a) Conjugate base of the acid  
 (b) Conjugate protonated base  
 (c) Lewis base  
 (d) Conjugate acid of the base  
 (e) None of these
129. Ammonia gas dissolves in water to form  $NH_4OH$ . In this reaction water acts as  
 (a) A conjugate base  
 (b) A non-polar solvent  
 (c) An acid  
 (d) A base
130. The conjugate base in the following reaction  

$$H_2SO_4 + H_2O \rightleftharpoons H_3O^+ + HSO_4^-$$
 (a)  $H_2O$  (b)  $HSO_4^-$   
 (c)  $H_3O^+$  (d)  $SO_2$



131. An aqueous solution of aluminium sulphate shows  
(a) A basic nature  
(b) An acidic nature  
(c) A neutral nature  
(d) Both acidic and basic nature
132. Neutralization of an acid with a base invariably results in the production of  
(a)  $H_3O^+$   
(b)  $OH^-$   
(c)  $H_2O$   
(d)  $H^+$  and  $OH^-$
133. The conjugate acid of  $HPO_4^{2-}$  is  
(a)  $H_2PO_4^-$   
(b)  $PO_4^{3-}$   
(c)  $H_3PO_4$   
(d)  $H_3PO_3$
134. Which of the following is not used as a Lewis acid  
(a)  $SnCl_4$   
(b)  $FeCl_3$   
(c)  $KCl$   
(d)  $BF_3$
135. Orthoboric acid in aqueous medium is  
(a) Monobasic  
(b) Dibasic  
(c) Tribasic  
(d) All are correct
136. According to Lewis concept which one of the following is not a base  
(a)  $OH^-$   
(b)  $H_2O$   
(c)  $Ag^+$   
(d)  $NH_3$
137. The aqueous solution of ammonium chloride is  
(a) Neutral  
(b) Basic  
(c) Acidic  
(d) Amphoteric
138. In the process  $BCl_3 + PH_3 \rightarrow BCl_3:PH_3$  The Lewis acid is  
(a)  $PH_3$   
(b)  $BCl_3$   
(c) Both  
(d) None
139. The conjugate acid of  $NH_3$  is  
(a)  $NH_3$   
(b)  $NH_4^+$   
(c)  $N_2H_4$   
(d)  $NH_2OH$
140. Which halide of nitrogen is least basic  
(a)  $NBr_3$   
(b)  $NI_3$   
(c)  $NCl_3$   
(d)  $NF_3$

