100. (c) $NH_3 \rightleftharpoons NH_2^- + H^+$

101. (a) $H_2SO_4 \rightleftharpoons H^+ + HSO_4^- \rightleftharpoons H^+ + SO_4^{--}$

HSO_4^- is conjugate base. But it is also an acid because it lose H^+.

102. (a) BF_3 is a Lewis acid because 'B' has incomplete octet.

103. (c) A proton acceptor

Explanation:

Concept	Acid	Base
Bronsted–Lowry	Proton donor	Proton acceptor
Lewis	Electron pair acceptor	Electron pair donor
Arrhenius	Produces H^+ in water	Produces OH^- in water

Example:

NH_3 (ammonia) + $H_2O \rightarrow NH_4^+ + OH^-$

→ NH_3 accepts H^+, so it is a Bronsted–Lowry base.

So, correct answer → (c)

104. (c) H_3O^+, however it exists as $H_9O_4^+$.

105. (a) $Al_2(SO_4)_3$ is a salt of weak base $Al_2(OH)_3$ and strong acid H_2SO_4.

106. (a) Al^{+++} of $AlCl_3$ undergoes hydrolysis.

107. (d) $H_2SO_4 \rightleftharpoons H^+ + HSO_4^-$

108. (b) A proton

Explanation:

Concept	Acid Definition	Base Definition
Bronsted–Lowry	Proton (H^+) donor	Proton (H^+) acceptor

Example:

$HCl \rightarrow H^+ + Cl^-$

Here, HCl donates H^+, so it is a Bronsted–Lowry acid.

109. (c) Conjugate base of H_2SO_4 is HSO_4^-.

110. (d) Presence of lone pair.

111. (b) According to Bronsted principle HNO_3 is acid they give H^+ in aqueous solution and form NO_3^-.

112. (c)$H_2O + H_2O \rightleftharpoons H_3O^+ + OH^-$.

113. (c)$NH_4^+$is a conjugate acid;

$NH_4^+ \rightleftharpoons NH_3 + H^+$

114. (a) $AlCl_3 + 3H_2O \rightleftharpoons Al(OH)_3 + \underset{\text{Stronacid}}{3HCl}$

115. (c) BF_3

Explanation:

Species	Lewis Acid/Base?	Bronsted Acid/Base?	Reason
NH_2^-	Lewis base	Bronsted base	Has lone pair → can donate e^-
O^{2-}	Lewis base	Bronsted base	Strong base → accepts H^+
BF_3	Lewis acid	NOT a Bronsted acid	Electron pair acceptor, but cannot donate H^+
OH^-	Lewis base	Bronsted base	Accepts proton (H^+)

116. (d)$HCl$is a strong acid its conjugate base means Cl^- is a weak base.

117. (d)Hydrazoic acid (HN_3) is a Lewis acid.

118. (c) Smaller the pK_a value than. Stronger the acid.

119. (c) $FeCl_3$

Explanation:

When these salts dissolve in water, they undergo hydrolysis.

Some metal ions act as Lewis acids because they can accept electron pairs from water molecules.

Compound	Behaviour in Water	Acidity
$AlCl_3$	Hydrolyzes	Acidic

Compound	Behaviour in Water	Acidity
$BeCl_2$	Weak hydrolysis	Less acidic
$FeCl_3$	Strong hydrolysis	Most acidic
None	–	–

Fe^{3+} ion has the highest charge density → it strongly polarizes water molecules → releases H^+ ions easily → strong acidity.

Hydrolysis Reaction (Word-Friendly):

$FeCl_3 + 3H_2O \rightarrow Fe(OH)_3 + 3HCl$

→ HCl released → solution becomes strongly acidic

120. (c) BF_3 is acidic because due to Lewis concept it accept a lone pair of electron.