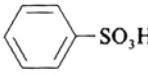
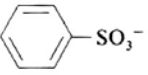
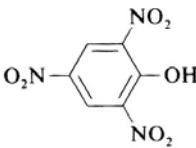
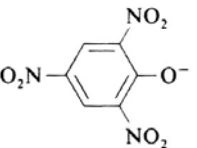
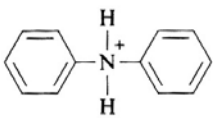
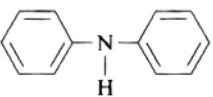
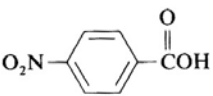
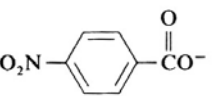
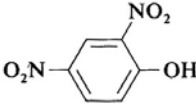
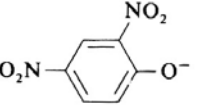
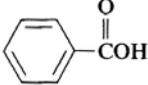
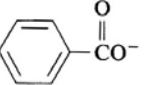
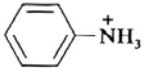
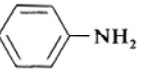
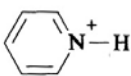

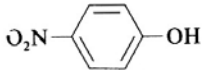
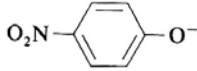
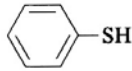
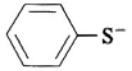
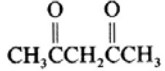
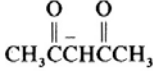
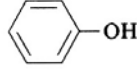
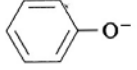
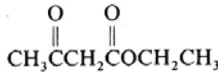
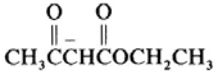
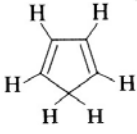
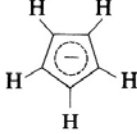
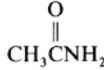
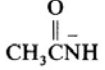
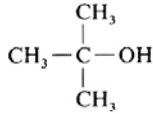
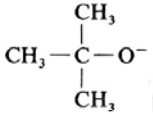
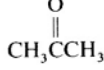
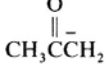
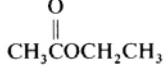

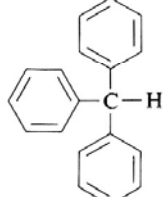
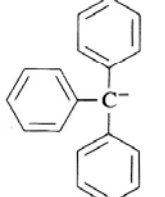


pK_a VALUES

Acid	Base	pK _a
H ₂ SO ₄	HSO ₄ ⁻	-9
$\begin{array}{c} ^+\text{OH} \\ \\ \text{CH}_3\text{CCH}_3 \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{CCH}_3 \end{array}$	-7.3
HCl	Cl ⁻	-7
$\begin{array}{c} \text{H} \\ \\ \text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3 \\ \\ \text{H} \end{array}$	CH ₃ CH ₂ OCH ₂ CH ₃	-3.6
$\begin{array}{c} \text{H} \\ \\ \text{CH}_3\text{CH}_2\text{OH} \\ \\ \text{H} \end{array}$	CH ₃ CH ₂ OH	-2.4
H ₃ O ⁺	H ₂ O	-1.7
HNO ₃	NO ₃ ⁻	-1.3
		-0.6
		0.25
$\begin{array}{c} \text{O} \\ \\ \text{CCl}_3\text{COH} \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CCl}_3\text{CO}^- \end{array}$	0.64
		0.8
$\begin{array}{c} \text{O} \\ \\ \text{CHCl}_2\text{COH} \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CHCl}_2\text{CO}^- \end{array}$	1.3
$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{ClCOH} \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2\text{ClCO}^- \end{array}$	2.8
HF	F ⁻	3.2
		3.4
$\begin{array}{c} \text{O} \\ \\ \text{HCOH} \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{HCO}^- \end{array}$	3.7
		4.1
		4.2
		4.6
$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{COH} \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{CO}^- \end{array}$	4.8
		5.2
H ₂ CO ₃	HCO ₃ ⁻	6.5

pK_a VALUES (Continued)

Acid	Base	pK _a
		7.2
		7.8
		9.0
^b HCN	CN ⁻	9.1
NH ₄ ⁺	NH ₃	9.4
(CH ₃) ₃ NH ⁺	(CH ₃) ₃ N	9.8
		10.0
HCO ₃ ⁻	CO ₃ ²⁻	10.2
CH₃NO₂	CH₂NO₂	10.2
CH ₃ CH ₂ SH	CH ₃ CH ₂ S ⁻	10.5
CH ₃ NH ₃ ⁺	CH ₃ NH ₂	10.6
		11.0
		15.0
		15.0
CH ₃ OH	CH ₃ O ⁻	15.5
H ₂ O	OH ⁻	15.7
CH₃CH₂OH	CH ₃ CH ₂ O ⁻	17
		19
		19
		23
CHCl ₃	CCl ₃ ⁻	25
HC≡CH	HC≡C ⁻	26
		31
NH ₃	NH ₂ ⁻	36
CH ₂ =CH ₂	CH ₂ =CH ⁻	36
CH ₄	CH ₃ ⁻	49