

EXPERIMENT 2**pH MEASUREMENT**

Name : _____ Group : _____

Matric no. : _____ Date of exp. : _____

Lecturer : _____

Table 1 pH and temperature readings of the 50% neutralized acid solutions.

Acid Solutions	pH Readings	Temperature (°C)
Acetic acid	(i)	
	(ii)	
Propanoic acid	(i)	
	(ii)	
Chloroacetic acid	(i)	
	(ii)	
Dichloroacetic acid	(i)	
	(ii)	
Trichloroacetic acid	(i)	
	(ii)	

Show that the equation $\text{pH} = \text{pK}_a$ is true for 50% neutralized acid solution.

Calculate the ionization constant, K_a , for each of the following acids:

Acid	K_a ($\times 10^{-5}$)	Temperature (°C)
Acetic acid		
Propanoic acid		
Cloroacetic acid		
Dichloroacetic acid		
Trichloroacetic acid		

Comment on the changes in the K_a values when the hydrogen atom in the acetic acid is gradually substituted with chlorine atom.