

THE HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG COMMUNITY COLLEGE

**Subject Title** : General Biochemistry

**Subject Code** : CCN2231

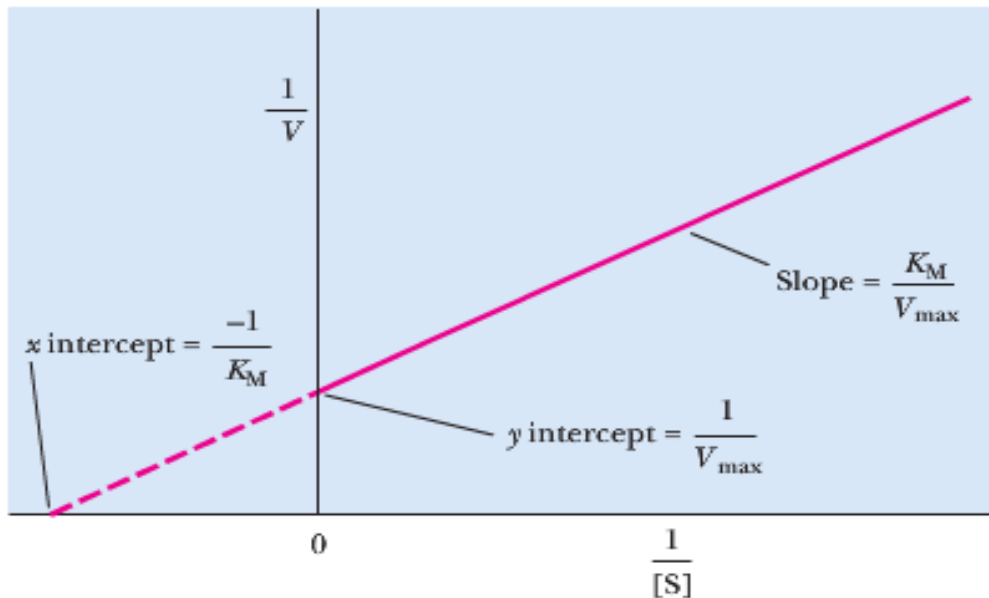
**Session** : Semester One, 2015/16

**Numerical Answers**

**Question B2**

Substrate Concentration (x10 <sup>3</sup> mM)	1/Substrate Conc(x10 <sup>-3</sup> mM) <sup>-1</sup>	Velocity (mM/sec)	1/Velocity (mM/sec) <sup>-1</sup>	Velocity (mM/sec) in presence of an inhibitor	1/Velocity (mM/sec) <sup>-1</sup> in presence of an inhibitor
0.0292	34.25	0.182	5.50	0.083	12.05
0.0584	17.12	0.265	3.77	0.119	8.40
0.0876	11.42	0.311	3.22	0.154	6.49
0.117	8.55	0.33	3.03	0.167	5.99
0.175	5.71	0.372	2.69	0.192	5.21

$$\frac{1}{V} = \frac{K_M}{V_{\max}} \left( \frac{1}{[S]} \right) + \frac{1}{V_{\max}}$$



X-intercept =  $-1/K_m = -22 \times 10^{-3} \text{ mM}^{-1}$  in presence and absence of inhibitor

$K_m = 0.045 \times 10^3 \text{ mM}$

Therefore the competitor is non-competitive type