Topic: Logarithm

Question 1 [2008 EOY, Q7]	marks
Solve the following equations for x: $\log_2(x+6)+\log_2(x-1)=1+\log_2(3x)$	[4]

Question 2 [2009 EOY, Q10]	marks
Solve the following equations: (a) $x^2-6=\lvert x\rvert$,	[4]

(b) $3^{2x-1} + 3^{x-2} = 3^x - \frac{4}{9}$,	[5]
(c) $1 + \lg(x + 1.6) = \lg 2 + \lg(2x^2 + 1)$.	[4]

Question 3 [2010 EOY, Q13]	marks
Solve the following equations: (a) $\log_8[2+\log_2(x-4)]=\log_{125}5$	[3]
(b) $e^{2\ln y}=\lg 1.6$	[3]

Question 4 [2010 EOY, Q14]	marks
Solve the pair of simultaneous equations $e^x(e^2)=(e^2)^y$ $\lg(x-1)+\lg(x+1)=\lg y+\lg(2x-y)$	[6]

Question 5 [2011 EOY, Q13]	marks
Solve the following equations (a) $\log_2\left(\frac{x^2}{4}+12\right)=2\log_2(x+5)-2,$	[4]
(b) $\log_4(x^2)+3\log_{x^2}4=4$	[4]

Question 6 [2012 EOY, Q3]	marks
Solve the equation $\log_x(2x+1) - 2\log_{x^2}(4x-1) + 1 = 0$.	[4]

Question 7 [2013 EOY, Q1c]	marks
(iii) Solve the equation $\log_5 x + 1 = 6\log_x 5$.	[3]

Question 8 [2014 EOY, Q3]	marks
(i) Solve the equations $\log_{(x-1)}(3x^2 - 7x - 2) = 2$	[4]
(ii) $\ln\left\|\sqrt{x} - 2\right\| + \frac{1}{2}\ln x = 0,$ where $x > 0$	[5]

Question 9 [2015 EOY, Q6]	marks
Solve the following equations. (i) $\log_3 x = \ln 2$,	[2]
(ii) $1 + \log_{\sqrt{2}}(y-1) = \log_2(22-7y)$.	[4]