EASTERN UNIVERSITY, SRI LANKA

FIRST YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE – 2011/2012

(Nov/Dec – 2013)

AEN 1103 – Basic Mathematics (1:15/00)

(Old Syllabus)

Re-Repeat

Answer all questions

Time: One hour

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1. (a) i. Find the equation of a straight line passes through the point (1, 2) with slope 3.

   ii. Let $A = \begin{pmatrix} 4 & 2 & -1 \\ -2 & 4 & 6 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & -4 & 3 \\ 0 & 4 & -2 \end{pmatrix}$.

   Find the matrix $2A - B$.

   (b) Evaluate the following limits:

   i. $\lim\limits_{x \to 3} \dfrac{27 - x^3}{x^2 - 3x}$;

   ii. $\lim\limits_{x \to 2} \dfrac{x^2 - 5x + 6}{x^2 - 4}$.

2. (a) Differentiate the following functions with respect to the variable x:

   i. $y = x^7(8x^5 + 4)$;

   ii. $y = (4x^3 - 2x + 1)/(3 - 5x^2)$.

   (PTO)

(b) Integrate the following with respect to x:

i. $(4x + 3)(2x - 1)$;

ii. $x^5/(x^6 + 2)$.