

EASTERN UNIVERSITY, SRI LANKA
FIRST YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2008/2009
(April/May 2010)
(Re-Repeat)
AEN 1103 BASIC MATHEMATICS (1:15/00)

X

Answer all questions
Time: 1 hour

Index No:

01. Evaluate the following

(i) $\lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5}$

(ii) $\lim_{x \rightarrow \alpha} \frac{x^4 + x^3 + 3x^2 + 5}{7x^4 + 3x^2 + 4}$

(iii) $\lim_{x \rightarrow \alpha} \frac{7 - 3x^2}{4x^2 + 3x - 2}$

(iv) $\lim_{x \rightarrow \alpha} \frac{x^2 + 3x}{2x^2 + 5}$

(v) $\lim_{x \rightarrow 2} \frac{3x - 6}{x - 2}$



02: Prove the following

(i) $\frac{1 + \sin x}{\cos x} + \frac{\cos x}{1 + \sin x} = 2 \sec x$

(ii) $1 + \tan^2 \theta = \sec^2 \theta$

(iii) $(1 + \sin \theta) (1 - \sin \theta) = \cos^2 \theta$

(PTO)

03. Find $\frac{dy}{dx}$ if $x = 3z^2$ and $y = 8z^2 + 11z$

04. Find the following integrals

(i) $\int \left(\frac{x^4 + x}{\sqrt{x}} \right) dx$

(ii) $\int (2x - 3)^2 dx$

(iii) $\int \sqrt{(x^2 + 2x)} (x + 1) dx$