1st SEM. 2014/2015

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: **BSc. in Agricultural Economics and Agribusiness Management Year I**
BSc. in Agricultural Education Year I
BSc. in Agronomy Year I
BSc. in Animal Science Year I
BSc. in Food Science, Nutrition and Technology Year I
BSc. in consumer science Year I
BSc. in Consumer sciences Education Year I
BSc. in Horticulture Year I
BSc. in Agricultural & bios stems Engineering Year I
BSc. in Textiles Apparel Design and Management Year I

COURSE CODE: **AEM 101**

TITLE OF PAPER: **MATHEMATICS**

TIME ALLOWED: **2:00 HOURS**

INSTRUCTION: **1.** ANSWER ALL QUESTIONS

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Question 1. (25 points)

1.1 In what length of time will E75 be the simple interest on E 500 invested at 3% per annum? (13 points)

1.2 Factorized $a^2 -(p+q)^2$ (12 points)

Question 2 (25 points)

2.1. Part of a garden consists of a square lawn a path 1.5 meters wide around its perimeter. If the lawn area is two –thirds of the total area find length of a side of the lawn?. (12 points)

2.1 Solve the equation $\frac{2x}{x+2} = \frac{3x}{x+5} - 1$ (13 points)

Question 3 (25 points)

3.1 Find the solution set of system of simultaneous equation. (6 points)

$2x^2-3y^2=20$

$2x + y = 6$

3.2. How long will it take the earth's population to double if it continuous to grow at the rate of 3 percent per year compounded continuously? (6 points)

3.3 Find the solution of exponential equation (6 points)

$x^{-3} = 1/27$

3.4 Find the solution set of logarithmic equation. (7 points)

$\log_2^{(2x-1)} + \log_2^{x} = 3$

Question 4 (25 points)

4.1 Express in its simplest form with positive indices

$$\sqrt{\frac{a^{3/2}b^{1/4}}{a^{-3/2}b^{-3/2}}}$$ (8 points)

4.2 Find the area under the curve $y= x^3$,x-axis and the line x=6 and x= 2? (9 points)

4.3. Evaluate $\int_1^2 x^3 + 4x + 2dx$ (8 points)

END OF PAPER