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1st SEM. 2014/2015



UNIVERSITY OF SWAZILAND

FINAL 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: ANSWER ALL QUESTIONS

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Question I, ( 25 points)

1.1. A sum of many is divided into two parts in ratio of 4: 9 .If the smaller amount is E 400, Find the large amount? ( 12 points)

1.2 How long will it take for a sum of money invested at 5% per annum simple interest to increase in value by 30%?

( 13 points)

Question 2, ( 25 points)

2.1 Factorize the following

$3(x-y)^2 -4(y-x)$ ( 12 points)

2.2 Find the solution set of system of simultaneous equation. ( 13 points)

$x-y=3$

$xy + 10x + y = 150$

Question 3( 25 points)

3.1 Differentiate with respect to x,

$Y= 3x -5+6x^3$ ( 6 points)

3.2. Evaluate $\int_0^1 2x^3\ dx$

( 6 points)

3.3 Find the solution of exponential equation ( 6 points)

$(4)^{-x} = 1/64$

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

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

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Question 4 ( 25 points)

4.1 If tan A =3/4 find the values of sin A and cos A without using calculator?

( 12 points)

4.2 From a point, the angle of elevation of a tower is $30^0$.If the tower is 20 m distance from the point, what is the height of the tower?

( 13 points)

# END OF PAPER