1st SEM. 2012/2013

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.

1.1 X ,Y and Z share a sum of money in the ratios 2: 4: 5,Z receives E 27 more than X. calculate the sum of money that was shared ?   (10 points)

1.2 A wholesaler sells an article to a retailer for E 260 which represents a profit to the wholesaler of 30%.The retailer then sells the articles to a customer at a profit of 25%.Calculate the total percentage profit based on the price the wholesaler paid?
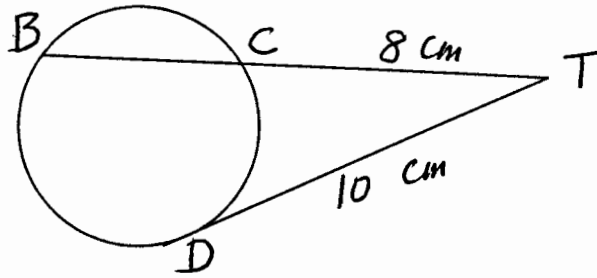   (10 points)

Question 2

2.1. Factorize $(a +b)^2 -4c^2$ (10 points)

2.2. Express $\frac{2-p}{2p} - \frac{3-2p}{3p} - \frac{p+2}{6p}$ as a single fraction in the lowest terms. (10 points)

2.3 Solve the equation $\frac{x}{3} + \frac{3x-1}{4} = \frac{3x+7}{12}$ (10 points)

Question 3

3.1 Find the solution set of system of simultaneous equation.   (10 points)
$x^2 + y^2 -6x +5y =2$
$x + y = 9$

3.2. Find the solution of exponential equation   (10 points)
$x^{-3} = 1/27$

3.3. Find the solution set of logarithmic equation.   (10 points)
$\log_2{}^{(3x-1)} + \log_2{}^x = 1$

Question 4

4.1 In the figure below, calculate the lengths of the chord BC.   (10 points)

4.2 Find the maximum and minimum values of $y = x^3 - 3x^2 + 4$ (5 points)

4.3. Evaluate $\int_1^2 x^3 \, dx$ (5 points)

END OF PAPER