

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2015/2016**

FIRST YEAR FIRST SEMESTER EXAMINATION FOR CERTIFICATE IN BUSINESS ADMINISTRATION

**SMB 1100: BASIC BUSINESS MATHEMATICS**

**DATE: AUGUST 2016 TIME: 11/2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***three*** *questions*

**QUESTION ONE (30MARKS)**

1. Define the following terms:
2. Set (2 Marks)
3. Linear function (2 Marks)
4. Given that 

Find:

1.  (1Mark)
2. A (1 Mark)
3.  (1 Mark)
4.  (1 Mark)
5. Differentiate between finite and an infinite set. (2 Marks)
6. Sketch the linear graph  (2 Marks)
7. State the and intercepts in the following:
8.  (1 Mark)
9.  (1 Mark)
10. Consumption C is a function of income Y given as 
11. What is the slope of the function? (1 Mark)
12. Is the inclination of the line positive or negative? (1 Mark)
13. What is the level of consumption when y=15. (2 Marks)
14. Solve the simultaneous equations using any suitable method

 (3 Marks)

1. Solve the quadratic equation using any suitable method.  (3 Marks)
2. Find the interest rate for shs.120,000 to accrue to shs.360,000 for a period of 5 years on simple interest. (3 Marks)
3. Find the mean of the data below:

47, 42, 45, 61, 72, 48, 49, 52, 42. (3 Marks)

**QUESTION TWO (10MARKS)**

1. The fourth term of an Arithmetric progression is 12 and the seventh term is 24. Find:-
2. The first term and the common difference. (3 Marks)
3. The sum of the first twelve terms of the series. (2 Marks)
4. What will be the value of shs.6,000 compounded at 15% p.a for 5 years. (3 Marks)
5. Given that  and . Find:
6.  (1 Mark)
7.  (1 Mark)

**QUESTION THREE (10 MARKS)**

1. Solve the linear equation  (3 Marks)
2. Solve the quadratic equation by the method stated:
3.  (3 Marks)
4.  (3 Marks)
5. State the y-intercept in the linear equation.  (1Marks)

**QUESTION FOUR (10 MARKS)**

1. The fourth term of a G.P is 54 and the seventh term is 1458. Calculate the first, common ratio and the sum of the first eight terms. (5 Marks)
2. Given the distribution below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 |
| f | 1 | 14 | 23 | 21 | 15 | 6 |

Calculate:

1. Mean (3 Marks)
2. Median (2 Marks)

**QUESTION FIVE (10 MARKS)**

1. Find the amount accrued on shs.16,000 for a period of 5 years on simple interest at the rate of 12% pa. (3 Marks)
2. Solve the simultaneous equation using elimination method:

 (3 Marks)

1. Sketch the graph of and state the x and y-intercepts. (3 Marks)
2. Given that find  (1 Mark)

**QUESTION SIX (10 MARKS)**

1. Given that data 45, 49, 55, 59, 65, 69 and 74. Find the standard deviation. (4 Marks)
2. The third term of an AP is 7 and the sixth term is 22. Find the first term and the common difference. (3 Marks)
3. Solve the quadratic equation using factorization method.  (3 Marks)