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**GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2019/2020 ACADEMIC YEAR ONE**

**SECOND SEMESTER EXAMINATION**

**SCHOOL OF BUSINESS AND ECONOMICS**

**FOR THE CERTIFICATE IN BUSINESS MANAGEMENT**

**COURSE CODE: CMB 06**

**COURSE TITLE: FOUNDATION BUSINESS MATHEMATIC1**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 10/12/2020 TIME: 3.00-5.00 PM**

**INSTRUCTION TO CANDIDATES**

* **The examination has FIVE (5) questions**
* **Question ONE (1) is COMPULSORY**
* **Choose any other TWO (2) questions from the remaining FOUR (4) questions**
* **Use sketch diagrams to illustrate your answer whenever necessary**
* **Do not carry mobile phones or any other written materials in examination room**
* **Do not write on this paper**

**This paper consists of TWO (2) printed pages *please turn over***

**QUESTION ONE (COMPULSORY)**

1. Define the following terms as used in mathematics  **[8 marks]**
2. Calculus
3. Matrix
4. Formula
5. Variation
6. Find the slope of the following function at x= 2 and x=3
7. Y=3x **[5 marks]**
8. Y= 2+2x **[5 marks]**
9. Work out the following
10. [4 x 15 + 72 ÷ 8 – (47 – 23) ÷ 6 ] x 2 **[3 marks]**
11. 105 ÷ 5 + 15 x 3 – (6 x 12 – 54 ÷ 9) **[4 marks]**
12. XYZ Ltd is issuing bonus shares to existing shareholders. Bonus shares will be distributed as follows: For every 4 shares held, 1 share will be allocated. An-g and Pang are shareholders holding 10 000 and 25 000 shares respectively. How many bonus shares will each receive? **[5 marks]**
13. Solve the Linear Equations
14. 5x – 3 = 2x + 6 **[5 marks]**
15. 5 (x + 1) – 2 (x – 1) = 10 **[5 marks]**
16. Solve the following simultaneous equations.
17. 3x – 4y = 10, 5x + 7y = 3 **[5 marks]**
18. 5x + 3y = 3, 3x + 2y = -1 **[5 marks]**
19. A boy buys 5 bars of chocolate at x cents each and y bags of toffee at 20 cents each. The total cost is $4. Find x and y given that x + y = 35. **[5 marks]**
20. Given that y =, find y when a = , x =  **[5 marks]**

**QUESTION TWO**

Find the derivation of the following function

1. Y=f(x)7x+3 **[10 marks]**
2. Y=f(x)=x2+3 **[10 marks]**

**QUESTION THREE**

Calculate the quadratic question using the formula method

1. x2 – 7x + 12 = 0 **[10 marks]**
2. 6x2 + 8x – 6 =0 **[10 marks]**

**QUESTION FOUR**

Akiosk owner wanted to buy one debe of potatoes, three bunches of bananas and two basket of onions. He went to Soko Mugdi and found the prices assh.280 for a debe of potatoes ;sh.50 for a bunch of bananas and sh.100 for a basket of onions. At soko Ngombe the corresponding prices were sh.300, sh.48 and sh.80

1. Express the Kiosk owner’s requirement as arrow matrix **[4 marks]**
2. Express the prices in each market as a column matrix **[6 marks]**
3. Use the matrices in (a) and (b) to find the total cost in each market **[10 marks]**

**QUESTION FIVE**

1. Given that (2x – y) (m + 5) = m (x – 1) and x = 3, when y = -1, find m. **[4 marks]**
2. Given that y = k  and y = 5 when x = 9, calculate
3. y when x = 36 **[4 marks]**
4. x when y = 15 **[4 marks]**
5. Given that s = 32t2, calculate
6. s when t =  **[4 marks]**
7. t when s = 2 **[4 marks]**