

The  
Management  
University  
of Africa



Sponsored by the Kenya Institute of Management

**CERTIFICATE UNIVERSITY EXAMINATIONS**  
**SCHOOL OF MANAGEMENT AND LEADERSHIP**  
**BRIDGING CERTIFICATE COURSE**

**FCC 101: REMEDIAL MATHEMATICS**

**DATE: 29<sup>TH</sup> JULY 2026**

**DURATION: 2 HOURS**

**MAXIMUM MARKS: 70**

**INSTRUCTIONS**

1. Write your registration number on the booklet.
2. **DO NOT** write in this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **FOUR** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. **Write all your answers in the examination answer booklet provided.**

**QUESTION ONE**

- a) Distinguish between qualitative and quantitative data, providing one example for each. **(4 marks)**
- b) Calculate the median of the following dataset: 6, 8, 12, 14, 18, 20. **(2 marks)**
- c) Solve the following simultaneous equations using the **substitution method**: **(4 marks)**  
 $3x + 2y = 16$   
 $x - y = 2$
- d) Define the following terms in financial mathematics: **(6 marks)**  
 i) Principal                      ii) Annuity      iii) Depreciation
- e) A salesperson earns a 5% commission. Determine the earnings from sales worth Ksh. 120,000. **(3 marks)**
- f) Solve for  $x$ :  $5x + 7 = 2$ . **(2 marks)**
- g) **Application:** The marks for six students are 12, 15, 10, 20, 18, 25. Calculate the range and explain what this value indicates about the spread of the data. **(4 marks)**
- h) Find the derivative of the function: **(5 marks)**  
 $y = 5x^3 - 2x^2 + 7x - 4$ .

**QUESTION TWO**

- a) A farmer invests Ksh. 15,000 in Treasury Bills at 8% p.a. simple interest for 3 years. Calculate the total interest earned. (4

**marks)**

- b) A TV costs Ksh. 30,000. A customer pays a deposit of Ksh. 10,000 and 10 monthly instalments of Ksh. 2,300.

- i) Find the total hire purchase price. (3  
 ii) Calculate the total interest paid above the cash price. marks)

**(3**  
**marks)**

**QUESTION THREE**

- a) Use the **elimination method** to solve:

$$2x + 3y = 12$$

$$3x - y = 7$$

- b) Solve the quadratic equation using the **quadratic formula**:

$$x^2 - 7x + 12 = 0.$$

**(5**  
**marks)**

**QUESTION FOUR**

- a) For the data: 25, 40, 25, 50, 60, 25, 45, 30, 25, 40. Find the Mode and Median.

**(5**  
**marks)**

**(4**  
**marks)**

- b) Based on the university's shift toward application-based testing, explain three methods of data presentation and justify which would be best for presenting annual sales trends to a board of Directors. 2

**4**

**QUESTION FIVE**

- a) Evaluate the integral:

$$\int (4x^2 - 6x + 8) dx.$$

F: 5,  
 10,  
 15,  
 20, 25

- b) Differentiate:

$$y = 2x^4 - 3x^3 + x^2 - 6x + 1.$$

Calculat  
 e the  
 mean  
**(x).**

**QUESTION SIX**

- a) Given the frequency distribution: X: 2, 3, 4,

**(6 marks)****(6  
marks)****(4 marks)****(5  
marks)**

- b) A businesswoman invests Ksh. 10,000 at 6% compound interest p.a. for 4 years. Calculate the compound interest earned.

**(5 marks)****FORMULAS PROVIDED:**Simple Interest:  $S = P(1 + rt)$ Compound Interest:  $S = P(1 + r)^t$ Mean:  $\bar{x} = (\Sigma fx) / (\Sigma f)$ Quadratic Formula:  $x = [-b \pm \sqrt{(b^2 - 4ac)}] / 2a$