



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING, BANKING AND FINANCE

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

CERIFICATE IN INFORMATION AND COMMUNICATION TECHNOLOGY

COMPUTATIONAL MATHEMATICS

DATE:22/11/2019

TIME: 11.30-2.30 PM

INSTRUCTIONS:

Answer all the questions

1. State and explain four types of matrices (10 marks)
2. State and prove four principles of determinant (10 marks)
3. Find the determinant of the following (10 marks)
$$\begin{vmatrix} 5 & 3 & 2 \\ 4 & 7 & 4 \\ 5 & 1 & 3 \end{vmatrix}$$
4. Find the product of (10 marks)
 - a) $A = \begin{vmatrix} 4 & 5 \\ 4 & 3 \end{vmatrix}$ $B = \begin{vmatrix} 3 & 2 \\ 6 & 5 \end{vmatrix}$
 - b) Add $C = \begin{vmatrix} 6 & 3 \\ 2 & 5 \end{vmatrix}$ $D = \begin{vmatrix} -1 & 2 \\ -2 & 1 \end{vmatrix}$
5. Solve the following simultaneous equation using Inverse method (10 marks)
 $5x + 6y = 80$
 $7x + 10y = 570$
6. Find inverse of (10 marks)
$$A = \begin{vmatrix} 6 & 2 & -3 \\ 5 & -3 & 4 \\ 1 & 4 & 7 \end{vmatrix}$$
7. Using Cramers Rule, solve (10 marks)
 $2x - 3y + 4z = -4$
 $x + 5y - 2z = 15$
 $4x + 2y + 6z = 10$
8. Explain in brief the uses of probability theory in the economy. (10 marks)