



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS AND ECONOMICS

**UNIVERSITY EXAMINATION FOR THE DEGREE OF CERTIFICATE IN
BUSINESS ADMINISTRATION**

1ST YEAR 1ST SEMESTER 2017/2018 ACADEMIC YEAR

NAIROBI CITY LEARNING CENTRE

COURSE CODE: BCA 2112

COURSE TITLE: INTRODUCTION TO BUSINESS MATHEMATICS

EXAM VENUE:

STREAM:

DATE:

EXAM SESSION:

TIME:

INSTRUCTIONS:

- 1. Answer question one (compulsory) and any other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

Question One

- a) (i) Kibet deposited sh. 100,000 with a bank to earn him interest at 10% p.a. compound interest every five months. How much interest will he earn after three years? How much total interest would he earn at a rate of 25% per annum simple interest? (10 marks)
- b) Solve the following quadratic equation:
 $3x^2+14x+10$ (5 marks)
- c) Tabitha can clean her house in 4 hours while her husband Brian can clean the same house in 2 hours. If the two work together, how long would it take them to clean the house? (5 marks)
- d) Use matrix method to solve the following simultaneous equations:
 $2x+3y=3$
 $3x-y=10$ (5 marks)
- e) A manufacturer sells hair driers at shs. 8,000 thus making a profit of 25%. What is the cost of manufacturing the driers? (5 marks)

Question Two

A company makes two products, Classic and Delight. The cost of making 15 units of Classic and 10 units of Delight is kshs. 600. The cost of making 5 units of Classic and 8 units of Delight is Ksh. 340. The manufacturer makes a profit and 20% and 25% on each unit of Classic and Delight respectively.

- i) Express the above problem in terms of simultaneous equations.
- ii) Calculate the cost of making one unit of product Q and M.
- iii) Calculate the price of one unit of product Q and M.
- (20 marks)

Question Three

- a) A survey of 600 students showed that 310 regularly listened to radio program “cheche” on radio and that 370 listened to “rauka” , while 120 listened to both programs.

Required:

The number of workers who listened to:

- i) cheche (1 marks)
- ii) rauka (1 marks)
- iii) Exactly one of the radio programs. (2 marks)
- iv) At least one of the radio programs. (3 marks)
- v) The number of students who did not listen to any of the radio broadcasts. (3 marks)

b) The marked price of a car in a dealers shop was sh. 400,000. Wekesa bought the car at 8% discount. The dealer still made a profit of 15%. Calculate the amount the dealer had paid for the car. (10 marks)

Question Four

Rachel and Rebecca started a business by contributing sh. 25,000 and 20,000 respectively. At the end of the year they realized a profit of sh. 81,000. The profit was allocated to development, dividends and reserves in the ratio 4:5:6 respectively. The dividends were then shared in the ratio of their contributions. Calculate the dividend paid to each of the partners. (20 marks)

Question Five

Three hundred and sixty litres of a homogenous paint is made by mixing three, A,B and C . The ratio by volume of of A:B is 3:2 and paint B:C is 1:2 . Paint A cost shs180 per litre , B is shs 240 per litre and C is shs. 127.5 per litre.

Determine;

- i) The volume of each type of paint in the mixture.
- ii) The amount of money spent in one litre of the mixture
- iii) The percentage profit by selling the mixture at shs221 per litre.

(20 marks)