

ISLAMIC UNIVERSITY IN UGANDA FEMALES' CAMPUS

**FACULTY OF MANAGEMENT STUDIES
DEPARTMENT OF BUSINESS STUDIES**

END OF SEMESTER I EXAMS 2020/2021 SESSION

COURSE: CBS

YEAR: 1

**PAPER: Elements of Business Mathematics
(CGM 1102)**

DAY: Tuesday

DATE: 25th May, 2021

TIME: 08:00AM – 11:00AM (3 HOURS)

***READ THE INSTRUCTIONS CAREFULLY.
DO NOT WRITE ANYTHING ON THE QUESTION
PAPER.***

INSTRUCTIONS

- Attempt any four questions
- Credit will be given for clarity of expression and use of relevant illustrations
- All questions carry equal marks

QUESTION ONE

- a) Use the fact that 1 foot is approximately 30 cm to convert
- 8 feet to cm
(2marks)
 - 50cm to feet
(2marks)
 - 195cm to feet
(2marks)
- b) A builder mixes 10 shovels of cement with 25 shovels of sand ,write the ratios of cement to sand
- in its simplest form (2marks)
 - in the form of 1:n
(2marks)
 - in the form n:1
(2marks)
- c) Rachel, Ben, and Emma are given £ 52, they decide to divide the money in the ratio of their age, 10: 9:7 how much does each receive? (4marks)
- d) In a factory each employee can make 40 chicken pies in one hour ,how long will it take
- 6 people to make 40 pies (3marks)
 - 3 people to make 240 pies (3marks)
 - 10 people to make 600 (3marks)

QUESTION TWO

- a) Convert 1 hour 42 minutes to hour and 2.32 hours in hours and minute (4marks)
- b) Judith drives from Kampala to masaka a distance of 160miles in 4hours,she then drives from masaka to Kampala a distance of 90 miles in 1 hour and 30 minutes,

determine the speed for each journey
(5marks)

- c) A bus travels at speed of 40km/h, calculate the speed in
- m/s
(4marks)
 - mph
(2marks)
- d) a snail moves 5m in 2 hours , if the snail moves at the same speed, calculate
- the time it takes to move 20m **(4marks)**
 - the distance it would move in $3\frac{1}{2}$ hours **(2marks)**
 - the time it takes to move 1m **(2marks)**
 - the distance that it moves in 15 minutes **(2marks)**

QUESTION THREE

- $\log 10 + 2 \log 3 + \log 2$ **(5marks)**
- $2 \log 3 - 3 \log 2$ **(4marks)**
- $5 \log 2 + 2 \log 5$ **(4marks)**
- $3^x = 5^{x-2}$ **(5marks)**
- $5 \log 2 + 4 \log 3 - 3 \log 4$ **(5marks)**
- $\log 3 + \log 5$ **(2mark)**

QUESTION FOUR

- a) Define the following terms
- Annuity due
(2marks)
 - Ordinary annuity
(2marks)
 - Perpetuity
(2marks)
- b) A girl deposited shs 25,000 in her savings account that earned a simple interest per annum. At end of three (3) years, she found shs 27,250 on her account. What could have been the interest rate used by the bank?
(8marks)

- c) Mr. Hoods approached his bank for a loan of shs 5,000,000 for a period of five years. He was informed that the interest rate then was 12% and compounded annually. He would like to know how much this loan would finally cost him.

Required, compute the interest and total amounts Mr. Hoods is likely to pay at end years. (5marks)

- d) Assuming you invest shs 10,000,000 in a fixed deposit account that earns 10% per annum. How much interest will it earn over a 10 term year period? **(6marks)**

QUESTION FIVE

- a) Alma is going for his vacation and changes £ 500 to euros ,the bank he uses charges 5% commission , how many euros does she get after paying the commission if £ 1 = \$ 1.55 and £ 1 = € 1.58 **(7.5 marks)**
- b) You are planning to book flight between the USA and France , you have \$ 1000 but the flight costs € 560 , find out if you afford the flight if ,£ 1= 1.55 and £ 1 = € 1.58 **(7.5 marks)**
- c) Mummy is going to Italy and changes £ 700 to euros, how many euros does she get if £ 1 = \$ 1.55 and € 1.58 **(2.5 marks)**
- d) Roshini is going on holiday to America she has £ 700 spending money which he exchanges to dollars at the bank, the bank is offering an exchange rate of £ 1 = 1.55 dollars, the bank also charges a commission of 6% on any transaction ,how many dollars will roshini receive **(7.5marks)**

QUESTION SIX

- a) find the rate of discount for
- i)X ltd listed at \$ 300.00 less discount of \$ 77.20 **(3marks)**
- ii) Y ltd listed at \$149.99 whose net price is \$ 74.49 **(4marks)**

iii) Z Ltd. whose net price is 467.99 **(4marks)**

b) CompuCom bought two types of electronic calculators for resale model A costs \$42.00 and sells for \$66.50, Model B costs \$88.00 and sells for \$99.00, business overhead is 14% of cost, for, each model determine

- i) the markup **(6marks)**
- ii) the operating expenses **(4marks)**
- iii) the profit **(4marks)**

QUESTION SEVEN

a) distinguish between straight-line method and reduced balance method of depreciation **(4marks)**

b) Agatha furnishing Ltd manufactures and sells dining tables and garden tables, Martin and Fiona are directors of the company which has been trading for the past three years, the company's profit and loss account since the company was incorporated are shown below

Particular	Years		
	2014	2015	2016
Sales revenue	37,500,000	41,300,000	42,350,000
Cost of sales	13,725,000	-	15,750,000
Gross profit	23,775,000	26,075,000	-
Wages	5,200,000	5,500,000	6,750,000
Rent	4,000,000	4,250,000	4,500,000
Rates	2,500,000	2,500,000	2,500,000
Other expenses	4,250,000	4,500,000	4,550,000
Total expenses	15,950,000	16,750,000	-
Net profit	-	9,325,000	8,300,000

Required, calculate,

- i) cost of sales(2015) **(3marks)**
- ii) gross profit (2016) **(3marks)**
- iii) total expense (2016) and (2015) **(6marks)**
- iv) net profit (2014)and (2016) **(6marks)**

c) what year had the lowest net profit and why **(1mark)**

d) what is happening to net profit between 2014 and 2016 and why **(1mark)**

e) which expenses does not change and why in value in the period 2014 – 2016 **(1mark)**

END