



TECHNICAL UNIVERSITY OF MOMBASA
Faculty of Business & Social Studies

DEPARTMENT OF BUSINESS STUDIES

CERTIFICATE IN HUMAN RESOURCE MANAGEMENT
CERTIFICATE IN BUSINESS MANAGEMENT
CERTIFICATE IN STORES MANAGEMENT

BAC 1103: BUSINESS CALCULATIONS

END OF SEMESTER EXAMINATIONS

SERIES: APRIL 2015

TIME: 2 HOURS

INSTRUCTIONS:

- This paper consists of **FIVE** questions.
- Answer question **ONE (Compulsory)** and any other **TWO** questions.
- Do not write on the question paper

This paper consists of Five printed pages.

QUESTION 1 (Compulsory)

a) Without using a calculator evaluate:

i) $\frac{8^5}{8^3}$ (2 marks)

ii) $(6^4)^2$ (2 marks)

iii) $7^6 \times 7^4 \times 7^2$ (2 marks)

b) Given that:

$$x = -4, y = 6 \text{ and } z = -2$$

Find:

$$\frac{3x - 4z + y^2}{(x + y - z)^2}$$
 (4 marks)

c) Find the sum of the first 50 terms of the sequence:

1, 3, 5, 7, 9..... (5 marks)

d) Kirimi works at KCB; his remuneration consists of a salary of 20,000 and 10% commission on sales above 1,000,000. In the month of January 2015, his remuneration was 60,000/-. Calculate his total sales for the month. (8 marks)

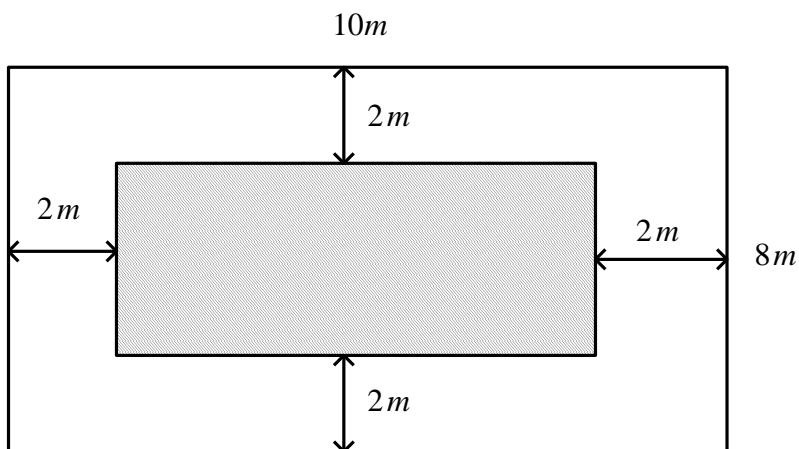
e) John wishes to invest 1,000,000 for four years at 12% interest rate per annum

i) Calculate the amount of interest he will receive using simple interest. (3 marks)

ii) Calculate the total amount he will receive the four years; if he had invested in a fixed account earning a compound interest of 12% per year. (4 marks)

QUESTION 2

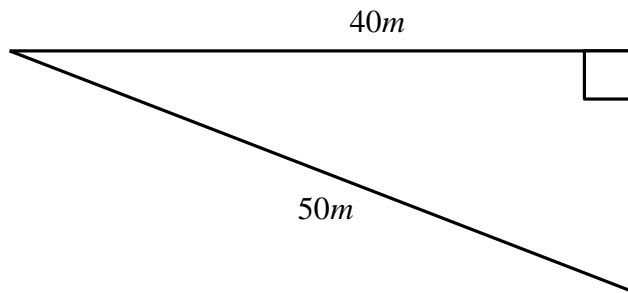
a)



Find the area of the shaded part.

(3 marks)

b)



i) Find the perimeter of the land.

(4 marks)

ii) How many fence poles will be required to cover the whole land at a distance of 2 meters apart.

(2 marks)

iii) Find the total area of the land.

(3 marks)

c) Three sons: John, James and Jones shared their father's inheritance at a ratio of 3:1:2. If James got 5,000,000.

i) Calculate the amount John and Jones got.

(5 marks)

ii) Find the total amount of inheritance.

(3 marks)

QUESTION 3

a) Find the sum of the geometric series with 16 terms:

2, 6, 18, 54..

(6 marks)

b) Mr. Kioko bought a car costing 6,000,000 in cash, by hire purchase. He was asked to pay a deposit of 2,000,000 plus 8 months instalments of 800,000 each. Determine.

i) Total amount paid by Mr. Kioko

(4 marks)

ii) How much more did he pay with reference to the cash price.

(2 marks)

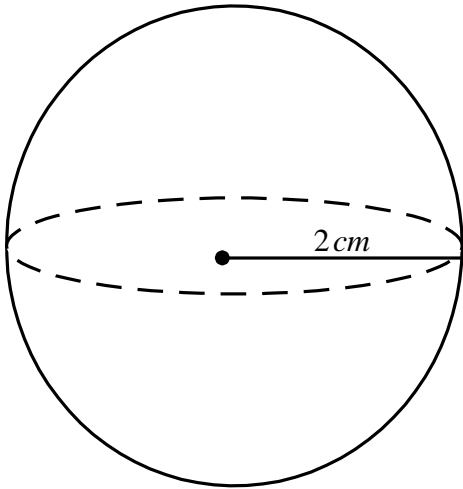
c) i) Differentiate between depreciation and appreciation giving relevant examples.

(8 marks)

QUESTION 4

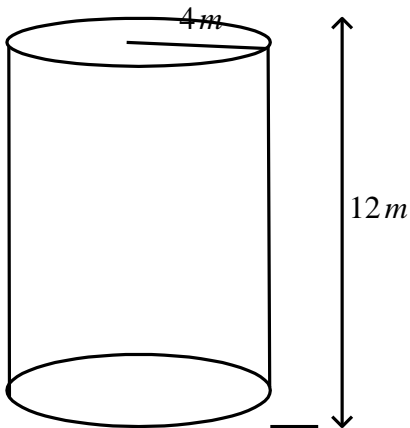
- a) Find the volume of
i) Sphere of radius 2 cm

(3 marks)



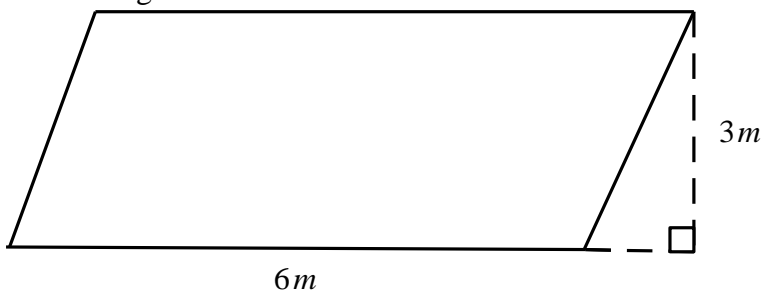
- ii) Cylinder

(3 marks)

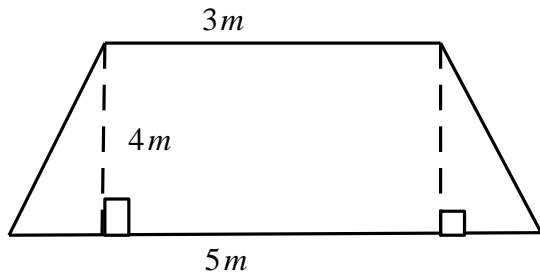


- b) Find the area of:

- i) Parallelogram



ii) Trapezoid



- c) In a certificate class of 2015, 60% are men and the rest are ladies. 20% of the ladies are below 25 years while 80% of the men are below the age of 25 years.
- i) Determine the number of student in the class if 40 of them are men below 25 years. **(4 marks)**
 - ii) How many men are there in the class. **(2 marks)**
 - iii) How many ladies belong to that class. **(2 marks)**

QUESTION 5

- a) i) List any **THREE** method used to calculate depreciation. **(3 marks)**
- ii) An item was bought on 1/1/2014 at a cost of 140,000, it was to be disposed on the fifth year where its salvage value will be 20,000. Calculate the depreciation charge at 31/12/2014 using the straightline depreciation method. **(5 marks)**
- b) Discuss any **FIVE** laws of price sensitivity and consumer psychology. **(10 marks)**
- c) What are discounts. **(2 marks)**