PAN AFRICA CHRISTIAN UNIVERSITY
END OF SEMESTER EXAMINATION
DENT0112: QUANTITATIVE METHODS

Exam Purpose and Focus

The exam gives you an opportunity to demonstrate personal mastery of lessons learnt during this course. You will be judged, not by the amount of material you write, but by a demonstration of critical thinking and writing. Special regard will be paid to evidence of a robust scholarly integration of theories, principles and practice.

Exam Procedure

Please note the following carefully:

1. All parts of the exams will be available in the Assignments and Tests Folder in Blackboard from ………………….(date-time) and must be completed by …………………………..(date-time)
2. Once you open any part of the exam, you must complete that part within the assigned time. After this it will close and you can no longer access it.
3. All essays must be written in the exam platform and NOT on a separate paper. NO ATACHMENTS or COPY AND PASTE are allowed.
4. Ensure you have reliable internet and adequate time before you start any part of the exam.
5. You MUST NOT refer to any books, notes, or class discussions from your computer or notebooks
6. You MUST NOT share or discuss your answers or exam questions with any member of the class during the exam week, even if they have already done the exam.
7. Attempt at least 4 questions, question 1 is compulsory.

Time limit: 1 hour

Grading method: Highest grade

Question 1(Compulsory Question) (

a) Highlight five application of quantitative techniques in business (5marks)

b) Infotell a research firm collected the following information about particular buying behavior of certain families and gave the following information;

150 families bought food, clothes and luxuries;

250 families bought food and luxuries;

420 families bought food;

200 families bought clothes and food;

60 families bought luxuries and clothes, but not food;

40 families bought luxuries, but neither food nor clothes;

100 families bought none of the three;

180 families bought clothes but not luxuries.

From your workings on the Venn diagram, determine;

i. The number of families surveyed (1marks)
ii. The number of families that bought clothes (1marks)
iii. The number of families that bought luxuries but not clothes (1marks)
iv. The number of families that did not bring luxuries (1marks)
v. The number of families that bought food or costumes (1marks)

Question 2

a) A store sells t-shirts. The average selling price is Ksh. 15 and the average variable cost (cost price) is Ksh. 9. Thus, every time the store sells a shirt it has Ksh. 6 remaining after it pays the manufacturer. This Ksh. 6 is referred to as the unit contribution.

i. Suppose the fixed costs of operating the store (its operating expenses) are Ksh. 100,000 per year. Find Break-even in units (2 marks)

ii. If the owner desired a profit of Ksh. 25,000, what will be break-even point in Ksh? (2 marks)

b) Discuss two advantages of marginal costing techniques (2 marks)
c) Discuss 4 limitations of marginal costing (4 marks)

Question 3

a. The sum of two numbers is 27 and their product is 50. Find the numbers. (2marks)

b. State four areas where quadratic equations can be applied (8 marks).

Question 4

a) Distinguish the difference between quantitative and qualitative methods (4 Marks).
b) It takes tap A four hours to fill a tank and Tap B six hours to fill the same tank. It takes C eight hours to empty the same tank. If the taps were to run concurrently, how long will it take to fill the tank (6 Marks).

Question 5

a) Define a function (2mark)
b) Outline the steps for carrying out differentiation (8 Marks).

Question 6

a) Define the following terms;
   i. Descriptive statistics (2 Marks).
   ii. Inferential Statistics (2 Marks).
   iii. Quantitative methods (2 Marks).
   iv. Indefinite integrals (2 Marks).
   v. Definite integrals (2 Marks).