

Index Number.....Signature.....

Date.....



CHRISTIAN SERVICE UNIVERSITY COLLEGE

KUMASI, GHANA

CSUC SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT AND GENERAL STUDIES

END OF FIRST SEMESTER EXAMINATIONS – 2021/22 ACADEMIC YEAR

LEVEL 100

CSBA 149: BUSINESS MATHEMATICS

JANUARY, 2022

70MARKS

TIME ALLOWED: 2HOURS.

GENERAL INSTRUCTIONS TO CANDIDATES:

- Answer **THREE** questions in all:
- Answer all questions from Section A and **TWO** questions from Section B.
- Write your index number on top of the question paper and on every page of the answer booklet.

Examiner: Nkukpornu Etse

SECTION A: ANSWER QUESTION 1 (30 MARKS)

QUESTION 1.

The initial investment for Project Accra and Project Kumasi is GHC 5000

Period	Project Accra	Project Kumasi
1	1000	2000
2	2500	2000
3	2500	2000
4	1500	1000

If the opportunity cost of capital is 10%. Calculate

- i. The discount factors **(6 marks)**
- ii. Net present value of the project Accra **(10 marks)**
- iii. Net Present of the Project Kumasi **(10 marks)**
- iv. Advise management on the choice of project to undertake **(4 marks)**

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION 2.

The distribution illustrate the weight in kilogram of some children.

Weight (kg)	2	4	6	8	10
Frequency	1	6	18	10	15

Calculate

- I. Mean weight correct to the nearest whole number **(5 marks)**
- II. Modal weight **(1 marks)**
- III. Median **(2 marks)**
- IV. Range **(2 marks)**
- V. Standard deviation **(10 marks)**

QUESTION 3

Consider the following returns on securities A and B with a probability given.

Probability	Return on security A	Return on security B
0.2	30	15
0.2	12	13
0.2	7	7
0.2	6	0
0.2	0	-10

- i. Calculate the covariance of securities A and B (15 marks)
- ii. Interpret your results (5 marks)

QUESTION 4.

- (a) What is the future value after 78 months of GHC 2,500.00 invested at 5.25% p.a. compounded semi-annually (5 marks)
- (b) Calculate the amount of money that must be invested for 245 days at 5.75% to earn GHC 42.46 (5 marks)
- (c) A student invested GHC 1,000.00 at a rate of 14.5% p.a. for 4 years to enable her get working capital to start her own business after school. Calculate how much her future value will be at the end of the investment
- I. If the investment is on simple interest basis (4 marks)
 - II. If the investment is on compound interest basis (4 marks)
 - III. Advise her on the preferred investment choice (2 marks)