Ashesi University

Introduction to Finance

Risk & Return

Question 1

a. The table below shows details of stocks of Fanmilk and Stanchart. The correlation between them is -0.1. Your client wishes to invest a total of GHS 250,000 in both stocks with GHS180,000 in Fanmilk.

State of Economy	Probability	Fanmilk	Stanchart
Boom	0.5	0.2	0.05
Normal	0.2	0.04	0.01
Recession	0.3	-0.02	-0.04

Find the: i. expected return on the portfolio ii. Portfolio risk

b. Mr. Hudson, your client, seeks to invest GHS1million in stocks of firms. You have gathered data of three potential companies to invest in.

State of Economy	Probability of State of Economy	Rate of returns Stock A	Stock B	Stock C
Boom	5%	-19%	9%	6%
Normal	45%	11%	8%	13%
Recession	50%	23%	5%	25%

a. Assuming Mr. Hudson is interested in investing all the amount in one firm, considering he is risk-averse, which one should he?
b. What is the expected return on the portfolio assuming he invests GHS250,000 in stock A, GHS 550,000 in stock B, and the remainder in stock C?

Question 3

Sir Makosah, the portfolio manager of the Ashesi 2016 Investment Club has GH¢75,000 to invest. Sir Makosah is considering the shares of two companies – UT Bank and Total Ghana. The following table shows the probability distributions of possible future returns for the two shares:

Probability	UT Bank Possible Returns (%)	Total Possible Returns (%)
0.15	20	35
0.2	-10	10
0.25	12	20
0.3	20	-25
0.1	18	15

Required:

(a) For each of the two shares, compute the following:

i) expected return **ii)** variance **iii)** standard deviation **iv)** coefficient of variation

(b) If Sir Makosah would like to invest in only one of the options, recommend the best investment option based on

i. the statistical element of risk.

ii. risk relative to return.

(c) If Sir Makosah invests GH¢30,000 in ABC and GH¢45,000 in XYZ, determine the following:

i) portfolio expected return ii) portfolio expected risk

(*Note: the correlation coefficient between the returns on the shares of ABC and XYZ is 0.65*)

Question 4

a) Distinguish between systematic and unsystematic risk
b) State the assumptions underlying CAPM
c) Explain the concept of efficient market
d) What are the three forms in the efficient market theory?