NOVEMBER 2021 PROFESSIONAL EXAMINATION
FINANCIAL MANAGEMENT (PAPER 2.4)
CHIEF EXAMINER'S REPORT, QUESTIONS & MARKING SCHEME

STANDARD OF PAPER

The paper measured up to the expected standard in terms of the difficulty and precision levels and the level of coverage. It appeared very precise and straightforward in almost all the questions. The spread of questions across the syllabus was good and again showed consistency with previous papers. Additionally, the spread of sub-questions was also considered good, enabling well-prepared candidates to answer questions across various areas satisfactorily.

The trend on quantitative and theory questions shifted more to the theory side in the past few sittings. The quantitative questions which in the past averagely constituted about 70% or more has shifted more to the theory or essay type questions. In the sitting under review 55% of the questions were quantitative or calculation based while 45% were essay based compared to 62% and 38% respectively in the May 2021 sitting.

The marks allocations were generally good and well within the syllabus weightings and commensurate the amount time required for each question.

PERFORMANCE OF CANDIDATES

The performance of the candidates was good even though slightly below May 2021 sitting but still above historical pass rates in the paper. The overall pass rate was 35%, 10% below the 45% in the May 2021 exams but still better than the 23% and 13% in the two sittings in 2020.

Key drivers of the good performance:

- Good blend of questions which were generally precise and straight forward except for few areas requiring improvement.
- Good blend of quantitative and qualitative or theory questions providing candidates the opportunities to show their strength in both areas.
- Still observed improved quality of candidates who wrote the paper and good answers from candidates who prepared well for the paper.
- The Institute's initiative to provide platforms for interactions between examiners and students and also between examiners and tuition providers also provided a boost.

The good performance was spread across centres but still noticed pass rates far above the overall pass rates in certain centres and also below the overall pass rate in certain centres. This requires further improvement in areas noted for pass rates below the overall pass rate. The review of the scripts showed different approaches and responses to questions in both the qualitative and quantitative aspects of the paper by candidates with no evidence of copying noted

NOTABLE STRENGTHS AND WEAKNESSES OF CANDIDATES

The following strengths were observed:

- General improvement in understanding the requirements of the questions.
- The quality of answers was good, especially those candidates who scored good marks in overall scores or certain questions that received very good answers across.
- Time management was good as almost all candidates finished within the required time except those who could not answer some questions.
- The level of analysis and presentation of solutions to questions also saw improvement.

Observed reasons of the strengths:

- Better preparations by candidates
- Improvement in the clarity and precision of questions set
- Further insights provided to candidates through the Institute's organised interaction series between the examiners and the students
- Access to study materials, tuition and other resources
- The Institute's facilitated interactive series between tuition centres and examiners

The strengths can be enhanced by:

- Continuation of the interactive series facilitated by the Institute between examiners and tuition providers and also between examiners and students
- Continuous review of course materials relevant to the Institute's syllabus
- Continuous improvement in the provision of more tuition delivery channels and other guided studies.

Observed weaknesses demonstrated by candidates.

- Ill or poor preparation by candidates before sitting for the exams
- Some candidate's poor appreciation of the requirements of the questions set results in deviations from obtaining the right or expected answers
- Poor identification and application of the right formulas required to answer the questions
- Very limited knowledge of alternative approaches to solving questions which might have different approaches to answering them
- Weakness in thinking outside the box to answer applied questions

Remedies for observed weaknesses

- More collaboration between the Institute and Tuition centres
- Adequate preparation and also improvement in the identification and use of the right formulas in answering questions
- Explore more on the various approaches to answering questions from the various parts of the syllabus

QUESTION ONE

a) The Securities and Exchange Commission and the National Insurance Commission are part of a list of regulators established by an Act of Parliament. They play a very critical role in the regulation of the financial services sector in the country.

Required:

i) Explain **THREE (3)** main functions played by the Securities and Exchange Commission in Ghana. **(6 marks)**

ii) Explain **TWO (2)** functions performed by the National Insurance Commission in Ghana. **(4 marks)**

b) LIGRI Bank Ghana Ltd generates a profit after tax of 15% on shareholders' funds. The current capital structure of the bank is as follows:

	GH¢
Ordinary shares	40,000,000
Reserves	80,000,000
Total	**120,000,000**

The management, with the board's approval, wishes to raise GH¢50,000,000 from rights issue to expand their existing operations in the country. The return on shareholders' funds will not change. The current ex dividend market price is GH¢4 per share. The right issue price proposed by the Finance Director is GH¢3.8 per share

Required:

i) Calculate the ***total number of shares*** to be issued by the company. **(3 marks)**

ii) Determine the ***theoretical ex-right price*** per share after the issue. **(3 marks)**

iii) Calculate the ***new earnings per share*** after the right issue. **(3 marks)**

iv) Comment on the calculations of the theoretical ex right price calculated in ii) above. **(1 mark)**

(Total: 20 marks)

QUESTION TWO

Mr Asare Jones inherited the Mindsworth Textile Company Ltd (Mindsworth) an unlisted company from his Father. The company has 1,000,000 shares which is solely owned by Mr Asare Jones. For the past five years, profits have fallen below the industry average with a growth rate of only 2%, while the industry average is more than twice this rate.

Mr Asare Jones has been approached by Indiana Textiles Ltd (Indiana), a competitor, with a bid to take over the assets and liabilities of Mindsworth in exchange for 800,000 shares in Indiana. The shares would add up to Indiana's existing 7,200,000 shares. Indiana's shares are currently valued at GH¢9.50 per share.

Meanwhile, Obiba Management Associates (OMA), which is a corporate finance consultancy firm, has offered GH¢3,000,000 to take up 49% of the shares of Mindsworth and grow the company's current earnings of GH¢850,000 per the last financial year by 5% in the first three years and after that, 3% into perpetuity.

Mr Asare Jones, after assessing the risks associated with the various options, has revised his current expected rate of return of 15%. This is to increase by three percentage points for the offer from Indiana and five percentage points for the offer from OMA.

Required:

a) With appropriate computations, advise Mr Asare Jones on the following:

i) The benefits and risks associated with each of the options available, including not accepting any of the offers **(12 marks)**

ii) Advise on the best option to take. **(2 marks)**

b) Distinguish between the value of a company and market capitalisation of a company. **(3 marks)**

c) Explain **THREE (3)** challenges Mr Asare Jones will face with the valuation of his unlisted company in the textile industry. **(3 marks)**

(Total: 20marks)

QUESTION THREE

a) You are the assistant to the Finance Manager of Kunta Medical Centre. Your boss is negotiating a deal with an investment company investing GH¢500,000 over 3 years. The main terms of the proposed investment deal are that if the amount is deposited now and invested continuously for 3 years, it would attract an 18% annual interest rate with quarterly compounding. However, if the initial deposit of GH¢500,000 is maintained and additional deposits of GH¢50,000 each are made at the beginning of year 2 and year 3, the deposits would attract 18.0% annual interest in year 1, 18.5% in year 2, and 19% in year 3 all with quarterly compounding.

Your boss has asked you to do some computations to inform her about the growth of the deposits based on the terms of the propose deal.

Required:

i) Suppose GH¢500,000 is deposited now, and there are no top-up deposits in the future; Compute the future value of the deposit at the end of the third year. **(3 marks)**

ii) Suppose the initial deposit of GH¢500,000 is made now, and the top-up deposits of GH¢50,000 each are made in the future per the terms of the proposed investment deal;

- Compute the future value of the initial deposit at the end of the third year. **(3 marks)**
- Compute the aggregate future value of the top-up deposits at the end of the third year. **(3 marks)**
- Compute the aggregate future value of all the deposits at the end of the third year. **(1 mark)**

b) Sesamu Dried Fruits Ltd is a fruits processing company in Ghana. The company has exported raw mangoes to a distributor in Japan. The invoice value of JP¥20 million is to be collected in three months. The exchange rate between the Ghanaian cedi (GH¢) and the Japanese yen (JP¥) is currently GH¢0.0584/ JP¥1. It is expected that the Ghana cedi may appreciate against the JP¥ in the coming months.

Required:

Using the leading and lagging strategy for hedging currency risk exposure, is it advisable for the company to lag the collection of the JP¥ invoice value? **(5 marks)**

c) COVID-19 has led to volatility in the international money market. Although the international business has seen some improvement, progress has been very slow. As a result, the risk of losing part of an investment due to exchange rate and currency value fluctuations are very high.

Required:

Explain how ***Interest Rate Swap*** and ***Currency Swap*** can be used to mitigate the effects of market volatility. **(5 marks)**

(Total: 20 marks)

QUESTION FOUR

a) Companies spend money in various ways through their annual budgets, which are usually planned. These spending cover both operational and investment related decisions.

Required:

i) What are Capital Investment decisions? **(2 marks)**

ii) State **THREE (3)** areas that will be considered as capital investment spend or decision. **(3 marks)**

b) Mamaga Ltd manufactures household utensils in Ghana and is considering investing in a new aluminium smelting and moulding plant. This plant will have a useful life of 5 years but will cost GH¢400,000 to acquire and install with a residual value of GH¢20,000. The plant will produce 100,000 units per year. Other estimates are given below:

Selling price: GH¢30 per unit
Direct cost: GH¢20 per unit

Fixed cost (including depreciation) is GH¢160,000 per annum. Marketing and promotion cost not included in the above will be GH¢20,000 and GH¢32,000 for years 1 and 2, respectively. Additionally, investment in debtors and stocks will increase in year 1 by GH¢30,000 and GH¢40,000, respectively. Creditors will also increase by GH¢20,000 in year 1. Thus, debtors, stocks, and creditors will be recouped at the end of the machine life. The cost of capital is 18%. Corporate tax is 25% and is paid in the year in which profits are made. Depreciation is tax deductible.

Required:

Compute the Net Present Value of this project and advise Mamaga Ltd whether the plant should be acquired. **(10 marks)**

c) Financial markets provide platforms or medium through which holders of surplus funds invest their funds. Those with financial deficits could raise funds or capital, enabling both parties to achieve their objectives.

Required:

Distinguish between money markets and capital markets giving an example of financial instruments traded in each type of market. **(5 marks)**

(Total: 20 marks)

QUESTION FIVE

You are the assistant to the Finance Manager of Horthman Holdings Ltd. The Directors of the company are reviewing the cash management practices of the company. The main concern is that excessive cash balances are held in non-interest-bearing demand deposit accounts for relatively long periods. Your boss has been asked to advise the Directors on the appropriate cash balance levels the company should keep and matters relating to the investment of excess cash.

To assist your boss, you analysed the company's demand for cash over the last three years and looked for some financial market figures. On the usage of cash, you found that the company's daily cash needs vary with a standard deviation of GH¢25,000. However, the annual demand for cash averages around GH¢65 million. Considering the results of your examination, your boss proposes that the minimum cash balance is set at GH¢100,000 going forward.

From your search on the financial markets, you found that the company can earn interest from investments in money market securities at an annual rate of 21.6% on an actual/360-day count convention. Also, you found out that the average transaction cost for trading investments in such money market securities is GH¢2,500.
Your boss recommends using the Miller-Orr model for determining the critical cash control levels and investment of temporary excess cash in money market securities.

Required:

a) Using the Miller-Orr model, determine the following:

i) the cash spread between the lower and upper cash limit. **(3 marks)**

ii) the cash return point. **(2 marks)**

iii) the cash level at which the company should invest excess cash. **(2 marks)**

b) The Chief Executive Officer (CEO) believes that the Baumol model is a simpler model than the Miller-Orr model, and your boss should consider recommending that to the Directors. Considering the information provided in the preamble, would you say that the Baumol Model would be more appropriate? Explain. **(4 marks)**

c) Your boss recommends that temporary excess cash be invested in money market securities. Explain **TWO (2)** conditions required when deciding on investing temporary excess cash. **(4 marks)**

d) Future contracts and forward contracts (more commonly referred to as futures and forwards) are used by businesses and investors to hedge against risks or speculate. Futures and forwards are examples of derivative assets that derive their values from underlying assets. Both contracts rely on locking in a specific price for a certain asset, but they have differences.

Required:
Explain **FOUR (4)** differences between ***futures and forwards***. **(5 marks)**

(Total: 20 marks)

SOLUTION TO QUESTIONS

QUESTION ONE

a)

i) The Securities and Exchange Commission performs the following functions:

- Guidance to the companies and the general public on the interpretations of the provisions of the securities law, rules and regulations on listing
- Licensing of market operators such as dealers, brokers, advisors, assets and fund managers etc
- Overseeing the regulation of the fund management industry in Ghana
- Ensuring the disclosure of any material information to the investors by companies and securities listed on the stock market
- Ensuring that post listing prospectus checks are done on the utilisation of funds raised through the listing
- Investigating breaches, if any, on the securities law and companies code
- Receiving and investigating public complaints regarding the sector it regulates
- In charge of mergers and acquisitions supervision

(Any 3 points @ 2 marks each = 6 marks)

ii) The following are the functions performed by the National Insurance commission.

- In charge of licensing of the entities in the insurance industry such as Insurance companies, brokers etc.)
- Setting up the standards and facilitating the setting up of codes for practitioners.
- Responsible for review and setting up of capital requirements for the industry operations
- In charge of approving the rates to be charged in the industry for insurance premiums
- Investigate and resolve complaints of the public and players in the industry etc

(Any 2 points @ 2 marks each = 4 marks)

b) Using the market price of 4 cedis per share
The shares of LIGRI Bank has nominal value of GH¢ 4 per share and book value of 40,000,000 cedis = 10,000,000 shares

	GH¢
Current market value of (10m shares x 4)	40,000,000
Funds to be raised through right issue	50,000,000
Final Market value	90,000,000
Earnings before rights issue (Total capital = 120m x 15%)	18,000,000
Earnings from new fund or issue (50m x 15%)	7,500,000
Total earnings after rights issue	25,500,000

i) **Number of shares to be issued**
Issue price @ 3.8 cedis per share
No of new shares (50m/3.8) = 13,157,894 shares **(3 marks)**

ii) **Theoretical ex right price** = Total market value/total no of shares issued
=>90,000,000/23,157,894 shares
= 3.886 cedis per share **(3 marks)**

iii) **New Earning per share** = Total earnings/Total number of shares
=> 25,500,000/23,157,894
= 1.1 cedis per share **(3 marks)**

iv) It is expected that since the return on shareholder funds has not changed, the theoretical ex-right price will be below the current price. It is expected it will be issued at a discount. **(1 mark)**

ALTERNATIVELY

Assuming a price of 1 cedi per share
The shares of LIGRI Bank has nominal value of GH¢ 1 per share and book value of 40,000,000 cedis = 40,000,000 shares.

	GH¢
Current market value of (40m shares x 4)	160,000,000
Funds to be raised through right issue	50,000,000
Final Market value	**210,000,000**
Earnings before rights issue (Total capital = 120m x 15%)	18,000,000
Earnings from new fund or issue (50m x 15%)	7,500,000
Total earnings after rights issue	**25,500,000**

i) Number of shares issued
Issue price @ 3.8 cedis per share
Number of new shares (50m/3.8) = 13,157,894 shares **(3 marks)**

ii) **Theoretical ex right price** = Total market value/total no of shares issued
= 210,000,000/53,157,894
= 3.95 cedis per share **(3 marks)**

iii) **New Earning per share** = Total earnings/Total number of shares
= 25,500,000/53,157,894
= 0.48 cedis per share **(3 marks)**

iv) It is expected that since the return on shareholder funds has not changed, the theoretical ex-right price will be below the current price. It is expected it will be issued at a discount. **(1 mark)**

(Total: 20 marks)

EXAMINER'S COMMENTS

This question was made up of parts, a) and b). The a) part was a straightforward question requiring candidates to explain three main functions played by the Securities and Exchange Commission and two main functions by the National Insurance Commission. This attracted 10 marks and was one of the best parts answered in the examination. Almost every candidate was able to answer this part, and some scored the maximum marks

The b) Part was on rights issue and the calculation of the number of new shares to be issued under the rights issue, the calculation of ex- right price per share, the new earning per share and comment on the calculation of the theoretical ex right price. This part also received good answers and provided enough alternatives or scenarios for various interpretations given by candidates, especially regarding the share price, to determine the existing number of issued shares. This part attracted good answers and some students scored the maximum marks. This was the second-best answered question in the entire paper.

QUESTION TWO

a)

i) Analysis of various options

The Present Value of Mindsworth

$Earnings \times \left(\frac{1+g}{r-g}\right) = 850{,}000 \times \left(\frac{1+0.02}{0.15-0.02}\right) =$ GH¢1,040,400.00 **(2 marks)**

Value by Indiana

$No.\ of\ Shares \times price\ per\ share = 800{,}000 \times 9.5 =$ GH¢7,600,000.00 **(1 mark)**

Value by OMA

$$\frac{d_1}{r-g^1}\left[1-\left(\frac{1+g^1}{1+r}\right)^n\right]+\left(\frac{d_t}{r-g^2}\right)(1+r)^{-n}$$

$$\frac{892{,}500}{0.15-0.05}\left[1-\left(\frac{1+0.05}{1+0.15}\right)^3\right]+\left(\frac{1{,}013{,}500.69}{0.15-0.03}\right)(1+0.15)^{-3}$$

$= 2{,}131{,}671.74 + 5{,}553{,}276.28 =$ **GH¢7, 684, 948. 02.** **(6 marks)**

Alternative Answer Using Tables

Yrs.	**1**	2	**3**	**Perpetuity**
Earnings	892,500.00	937,125.00	983,981.25	1,013,500.69
DF (15%)	0.870	0.756	0.658	
Perpetuity				8.333
Discount factor for terminal year				0.658
Present value	776,086.96	708,601.13	646,983.64	5,553,276.28
	1 mark	**1 mark**	**1 mark**	**2 marks**
Net Present Value	**7,684,948.02**	**1 mark**		

Benefits and risks

If Mr Asare does not accept any of the offers, the NPV of his business will be only GH¢1,040,400.00 but still maintain 100% ownership of the company.

However, in the case of Indiana, Mr Asare will lose majority interest in the new company, and the company's identity will also be lost. The value of his new shareholdings of GH¢6,400,000 is more than 6 times the value of his business.

The offer of GH¢3,000,000 for 49% from OMA is an undervaluation with regards to the assessment of future earnings. However, Mr Asare will still maintain the image and identity of his business and hold a majority interest in the company.

(3 points @ 1 mark each = 3 marks)

ii) The option will be to accept the offer from OMA. **(0.5 mark)**

This offer makes Mr Asare a majority shareholder and hence would be involved in the company's major decisions. He can share his industry experience with the management experts and hence facilitate the operational transformation that would be undertaken.

Also, the organisation as he inherited from his father would be intact, and its operations improved with the support of OMA. However, the offer from Indiana, though at a higher value, will mean the collapse of the business he inherited. This may have a significant psychological effect. **(1.5 marks)**

b) Value versus market capitalisation

The value of a company is the worth of its assets and possible earnings determined from various types of valuation processes such as book value, replacement value, and earnings. **(1.5 marks)**

Market capitalisation, however, is the worth of the company determine by the market price per share multiplied by the number of outstanding shares of the company.

In effect, though a value can be determined for any company, market capitalisation applies to only companies listed on a stock market. **(1.5 marks)**

c) Challenges with the valuation of unlisted companies

- The absence of an active market makes it difficult to determine the price per share.
- The absence of a market price means various valuation methods should be applied. However, each valuation method will produce a different value, leading to disagreements.
- Measures such as cost of capital and betas are difficult to determine and require significant estimations, which may be biased.
- Reliance on historical information to predict future earnings may be problematic as past performance may not adequately represent future trends.
- In the absence of proper record keeping, there would be inadequate information as the basis for projections.

(Any 3 points @ 1 mark each = 3 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Question two was on mergers and acquisition and made up of three sub-questions. The a) part was a scenario question of an existing Company Mindsworth Textile Company Ltd, an unlisted company with poor performance but attracting 100% acquisition by a competitor Indiana Textiles Ltd which was to be paid in shares of Indiana textiles. The second offer was from Obiba Management Associates which was ready to buy 49% of the existing company by offering GH¢ 3m cedis with other proposals to grow their earnings. Students were expected with the necessary computation to highlight the benefits and risks of the various options, including doing nothing and advising on the best option to take.

This part of the question appears lengthy and poses a challenge to candidates and hence, received poor responses or answers from the candidates. It was the worst answered part of the paper.

The b) and c) parts of the question were theory on the distinction between the value of a company and market capitalisation, and challenges of valuation of an unlisted company. This part received some good answers from the students.

QUESTION THREE

a)

i) If GH¢500,000 is deposited now with no top-up deposits, the future value of the account will be GH¢847,940.72:

$$\mathrm{FV_n} = \mathrm{P_0}\left(1 + \frac{\mathrm{i}}{\mathrm{m}}\right)^{\mathrm{n}*\mathrm{m}}$$

$$\mathrm{FV_3} = \mathrm{GH¢500{,}000} \times \left(1 + \frac{0.18}{4}\right)^{3 \times 4}$$

$$\mathrm{FV_3} = \mathrm{GH¢500{,}000} \times 1.695881433$$

$$\mathrm{FV_3} = \mathbf{GH¢847{,}940.72}$$

(Marks allocation: Interest factor = 1; Computation of future value = 1; final answer = 1)

ii) If GH¢500,000 is deposited now and the GH¢50,000 top-ups are made, the future value of the account will be GH¢992,518.17:

- The initial GH¢500,000 deposit will be compounded in the first, second, and third years at the respective interest rates. Its FV at the end of the third year may be calculated as under:

$$FV_n = P_0\left[\left(1 + \frac{i_1}{m}\right)^m \times \left(1 + \frac{i_2}{m}\right)^m \times \left(1 + \frac{i_3}{m}\right)^m\right]$$

$$\mathrm{FV_3} = \mathrm{GH¢500{,}000} \times \left[\left(1 + \frac{0.18}{4}\right)^4 \times \left(1 + \frac{0.185}{4}\right)^4 \times \left(1 + \frac{0.19}{4}\right)^4\right]$$

$$\text{FV}_3 = \text{GH¢}500{,}000 \times 1.720375196 = \mathbf{GH¢860,187.60}$$

(Marks allocation: Interest factor = 1; Computation of future value = 1; final answer = 1)

- The FV of the GH¢50,000 top-up deposits will be GH¢132,330.57:
  The first top-up, which occurs at the beginning of the second year (same as the end of the first year), will be invested in the second year and the third year. Its FV may be calculated as under**:**

$$FV_n = P_1\left[\left(1+\frac{i_2}{m}\right)^m \times \left(1+\frac{i_3}{m}\right)^m\right]$$

$$\text{FV}_3 = \text{GH¢}50{,}000 \times \left[\left(1+\frac{0.185}{4}\right)^4 \times \left(1+\frac{0.19}{4}\right)^4\right]$$

$$\text{FV}_3 = \text{GH¢}500{,}000 \times 1.442640136 = \text{GH¢}72{,}132.01$$

The second top-up, which occurs at the beginning of the third year (same as the end of the second year), will be invested in the third year. Its FV may be calculated as under**:**

$$FV_n = P_2 \times \left(1+\frac{i_3}{m}\right)^m$$

$$\text{FV}_3 = \text{GH¢}50{,}000 \times \left(1+\frac{0.19}{4}\right)^4$$

$$\text{FV}_3 = \text{GH¢}500{,}000 \times 1.203971278 = \text{GH¢}60{,}198.56$$

$$\text{Aggregate FV}_3 \text{ of topups} = \text{GH¢}72{,}132.01 + \text{GH¢}60{,}198.56 = \text{GH¢}132{,}330.57$$

(Marks allocation: Computation of future values = 2; final answer = 1)

- The aggregate FV of all the deposits will be GH¢992,518.17. It is the sum of the FV of the initial deposit and the top-ups.

$$\text{Aggregate FV}_3 = \text{GH¢}860{,}187.60 + \text{GH¢}132{,}330.57 = \text{GH¢}992{,}518.17$$

(1 mark)

b) Sesamu Dried Fruits Ltd – Currency risk problem

Applying leading or leading and lagging strategy

Leading and lagging is an internal strategy for hedging currency risk exposures. Leading refers to the case where an entity collects an underlying foreign currency receivable or settle an underlying foreign currency payable earlier to avoid a potential currency loss in the future. Lagging refers to the situation where an entity delays the collection of an underlying foreign currency receivable or the payment of an underlying foreign currency payable to enjoy a potential currency gain in the future.

In the case under review, the underlying exposure is a receivable denominated in a foreign currency (i.e., the Japanese yen), and the local currency (i.e., the Ghanaian cedi) is expected to appreciate against the foreign currency. That suggests a

potential currency exchange loss as the cedi's appreciation against the yen will result in the company earning fewer cedis from the yen receivable when it receives it in four months than it would make if the invoice were settled now. Therefore, the best time to collect the receivable is now or at least an earlier date than the agreed settlement date in four months' time. Thus, lagging the receivable collection under the circumstance described in the preamble is not advisable. The company should rather lead the collection.

(Marks allocation: Explanation of leading and lagging = 2; Supporting explanation = 3)

c) ***A currency swap*** contract (also known as a cross-currency swap contract) is a derivative contract between two parties that involves the exchange of interest payments and the exchange of principal amounts in certain cases that are denominated in different currencies. Although currency swap contracts generally imply the exchange of principal amounts, some swaps may require only the transfer of the interest payments.

Currency swaps are primarily used to hedge potential risks associated with fluctuations in currency exchange rates or to obtain lower interest rates on loans in a foreign currency. The swaps are commonly used by companies that operate in different countries. For example, if a company is conducting business abroad, it would often use currency swaps to retrieve more favorable loan rates in their local currency instead of borrowing money from a foreign bank.

For example, a company may take a loan in the domestic currency and enter a swap contract with a foreign company to obtain a more favorable interest rate on the foreign currency that is otherwise is unavailable.

An interest rate swap is an agreement between two parties to exchange one stream of interest payments for another over a set period. Swaps are derivative contracts and trade over-the-counter.

The most commonly traded and liquid interest rate swaps are known as "vanilla" swaps, which exchange fixed-rate payments for floating-rate payments based on LIBOR (London Inter-Bank Offered Rate), which is the interest rate high-credit quality banks charge one another for short-term financing. LIBOR is the benchmark for floating short-term interest rates and is set daily. Although there are other types of interest rate swaps, such as those that trade one floating rate for another, vanilla swaps comprise the vast majority of the market.

(5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Question three was on investment decision question, leading and lagging and interest rate and currency swap covering a) to c). With the a), candidates were required to calculate or compute the future value of an investment at the end of the third year and

also with the introduction of top up deposits at various interest rates and what the expected values will be at the end of the third year. This part of the question received mixed answers. Those who understood the question and chose the correct formulas scored a maximum of 10 marks. Most candidates who performed poorly faced the challenge of understanding the question and the correct formulas to use.

The b) aspect was on decision making on leading and lagging scenario question by a Ghanaian company Sesamu Dried Fruits Ltd on its exports in Japanese Yen (JP¥) which was due to be received in three months but the cedi (GH¢) forecast to appreciate against the JPY. Candidates were expected to advise the company whether it was advisable to lag the collections as part of its foreign exchange risk hedging strategy. This question attracted 5 marks. Even though the question appears straightforward, many of the candidates got confused and gave the wrong advice but still got some marks for the explanation of leading and lagging in foreign exchange risk management. Those who understood the question scored the maximum marks.

The c) aspect was on the interest rate and currency swap with 5 marks. This part also received poor answers except for the few candidates who scored the maximum marks.

The syllabus's risk management aspect is still posing a challenge to candidates and will require more effort to improve their performance.

QUESTION FOUR

a)

i) Capital investment decisions involve the deployment of resources, both financial and non-financial, in the expectation of receiving larger sums of money or monetary reward in the future. The initial financial outlay is big and the benefits come through over a number of years. **(2 marks)**

ii) The following are the typical areas of capital investment decisions

- Replacement of Equipment or assets decision
- The expansion of company activities in the form of new products, branch networks etc
- Undertaking research and development
- Introduction of new products
- Purchase of new Machinery o equipment
- Discontinuation pf products or closure of units or subsidiaries

(Any 3 points @ 1= 3 marks)

b) NPV of Plant (Amounts are in GH¢)

Year	0	1	2	3	4	5
Sales		3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
111Less Direct cost		(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,00)

Contribution		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Fixed cost		(84,000)	(84,000)	(84,000)	(84,000)	(84,000)
Promotion		(20,000)	(32,000)			
Depreciation		(76,000)	(76,000)	(76,000)	(76,000)	(76,000)
Net profit		820,000	808,000	840,000	840,000	840,000
Scrap						20.000
Taxable income		820,000	808,000	840,000	840,000	860,000
Tax at 25%		(205,000)	(202,000)	(210,000)	(210,000)	(215,000)
PAT		615,000	606,000	630,000	630,000	645,000
Add Depr. back		76,000	76,000	76,000	76,000	76,000
Working Capital		(50,000)				50,000
Net Cash flow	(400,000)	641,000	682,000	706,000	706,000	771,000
DF @ 18%	1	0.847	0.718	0.609	0.516	0.437
Present value	(400,000)	542,927	489,676	429,954	364,296	336,927

NPV = (400,000) +2,163,780 = **1,763,780**

Sales (1mark), Direct cost (1 mark), Fixed cost (1 mark), Promotion (1 mark), Depreciation (1mark), Scrap (1 Mark), Tax (1 mark), Working Capital (1 mark), Discount factor (1 mark) and Present values (1 mark) = 10 marks

(10 marks)

c) Money markets are markets where short term instruments are traded and tenor generally within one year. Examples of money markets instruments are: Treasury bills, commercial papers, Certificate of deposits, overnight deposits or placements, fixed deposits etc.

On the other hand, Capital markets are markets where long term securities are traded and tenor beyond one year. Examples of capital market instruments are: Government Bonds, Corporate bonds, stocks/shares etc.

(2.5 marks each = 5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Question four was in three parts, covering a) to c). The a) part was on capital investment decisions and the areas that will be considered capital investment spending. This was straight forward theory question that attracted good answers for a total of 5 marks.

The b) aspect required Net Present Value (NPV) calculation for an investment in an aluminium smelting and moulding plant by Mamaga Ltd, a manufacturer of household utensils in Ghana. The question was clear, precise and well-structured, making it easy for candidates to compute. This part attracted 10 marks and received one of the best answers from the candidates.

The c) part was on the distinction between money markets and capital markets, giving examples of each for a total of 5 marks. This also received good answers from the candidates.

QUESTION FIVE

a) The Miller-Orr Model

i) Cash spread

$$Cash\ spread = 3\left(\sqrt[3]{\frac{3Fs^2}{4k}}\right)$$

Trading cost, F = GH¢2,500
Standard deviation in daily cash usage, s = GH¢25,000
Daily interest rate, k = 21.6%/360 = 0.06%

$$Cash\ spread = 3\left(\sqrt[3]{\frac{3 \times \text{GH¢2,500} \times \text{GH¢25,000}^2}{4x\ 0.0006}}\right) = 3 \times 125{,}000 = \text{GH¢375,000}$$

(Marks allocation: Computation = 2; Final answer = 1)

ALTERNATIVELY

Spread = 3 [¾ x transaction cost x variance of cash flows] ^1/3
Interest rate

3 [¾ x 2,500 x 25,000²] ^1/3
0.0006

= 3 [1,171,875,,000,000] ^1/3
0.0006

= 3 x 125,000
= 375,000

ii) Cash return point
The cash return point is estimated as under.

$$RP = L + 1/3 \times Cash\ spread$$

Lower cash limit, L = GH¢100,000$RP = \text{GH¢100,000} + \frac{1}{3} \times \text{GH¢375,000} = \text{GH¢225,000}$

(Marks allocation: Computation = 1.5; Final answer = 0.5)

iii) Upper cash limit

The cash level at which the company should invest excess cash is the upper cash level. The upper cash level is estimated as under.

$$U = L + Cash\ spread$$

$$U = \text{GH¢}100{,}000 + \text{GH¢}375{,}000 = \text{GH¢}475{,}000$$

(Marks allocation: Computation = 1.5; Final answer = 0.5)

b) Use of the Baumol Model

The CEO may be right in saying that the Baumol model is simpler than the Miller-Orr model. However, the Baumol model operates under certain requirements, including the requirement that cash usage is known with certainty and is even through the year. The preamble states that the company's daily cash usage varies and has daily standard deviation of as much as GH¢25,000. This implies that at least two key requirements for the use of the Baumol model, which is that cash usage is even and certain, are not met in the case of Horthman Holdings.

Therefore, the Baumol model will not be an appropriate model to apply to the company. The Miller-Orr model will be a more plausible model to use as it recognises uncertainty in cash demand. Besides, the Miller-Orr model makes room for cash flows from operations in the determination of the optimal cash balance.

(Marks allocation: Explanation = 3; Conclusion = 1)

c) Considerations for investing temporary excess cash

The key conditions that must be had when deciding to invest temporary excess cash are the following:

The safety of the principal. The principal concern when investing temporary excess cash is not getting the principal back due to default on the part of the investment (or investee) company.

The marketability or liquidity of the investment asset. As the amount to be invested may only be idle temporarily, it is important to ensure that it is invested in investment assets that can be easily converted into cash when needed. Short-term securities may be the best choice as they tend to be highly liquid or marketable.

The maturity period. The shorter the maturity period, the lower the risk of locking up the money and not getting it back when needed. As the amount to be invested may only be idle temporarily, it is advisable to invest it in short-term investment assets to secure liquidity.

The profitability of the investment. The return or yield on the investment asset should be considered as the essence of investing temporary excess cash is to earn some returns. With other things considered, investment assets that present higher yields should be preferred. However, it should be noted that investments asset with higher yields are likely to be of longer maturities and present a higher risk.

(Marks allocation: Maximum of 2 marks for each of 2 Considerations = 4 marks)

d) A futures contract differs from a forward contract in the following areas:

Point of Distinction	**Futures Contract**	**Forward Contract**
Size of the contract	Only standardised contract sizes are available to choose from	Any desired quantity can be arranged
Maturity	Only standardised maturities are available: Mar, Jun, Sep, and Dec.	Any desired maturity can be arranged
Trading platform	Trading takes place on an organised exchange	Trading occurs over the counter between dealers and their clients
Pricing	Prices are marked to the market and so are permitted to vary as the underlying asset value changes.	Prices are agreed on at the commencement of the contract and remain fixed through the contract period.
Margin/collateral requirement	There are initial margin and variation margin requirements, which are marked to market daily.	No explicit collateral requirement, but a standard bank relationship is necessary.

(5 marks)

(Total: 20 marks)

EXAMINER'S COMMENTS

Question five again posed some challenges to candidates similar to last sitting. Sub-question a) required candidates to use the Miller-Orr model to determine the cash spread between the lower and upper limit, Cash return point in and the cash level at which the company should invest excess cash. Most candidates got confused on the right formula to use and got the i) part wrong which affected the ii) and iii) parts but still got some marks. Few candidates who understood the question performed very well and scored the maximum marks

The b) part, which required candidates to answer whether Baumol Model was appropriate based on the preamble given, attracted average marks with 4 marks allocated to that part.

The c) aspect was on two conditions to consider in the investment of temporary excess cash for 4 marks. This part received good answers.

The last part of the question d) which was on four differences between futures and forwards even though a familiar question frequently asked received average responses with some candidates clearly exhibiting lack of knowledge or understanding of both.