# JULY 2024 PROFESSIONAL EXAMINATIONS
# FINANCIAL MANAGEMENT (PAPER 2.4)
# CHIEF EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME

## STANDARD OF PAPER

The quality and standard of the paper was generally satisfactory, notwithstanding some few areas of the questions being overloaded. They were generally in line with past trends. The structure of the questions in the paper was also generally considered good except question two and four which both had investment appraisals appearing in the same question paper. The structure of the questions ensured that each question had a number of sub questions to facilitate the ability of the candidate to have questions to answer and score the needed marks to pass the paper

It was also noted that the spread of questions and marks allocations across the paper were well done offering the candidates the opportunity of being able to answer the questions and scoring the maximum marks except some few areas that appeared overloaded with a lot of information. The marks were allocated based on the level of difficulty and details required by each question to maintain standards and ensure fairness in the award of marks consistent with past trends

The questions additionally were also generally well spread between theory and calculations with 36 marks allocated to the essay or theory questions and 64 marks for calculations-based areas but noted to be a slight departure in favour of more calculations-based questions from the past few sittings.

Notwithstanding the significant improvement in performance in the recent sittings, the candidates generally struggled to maintain or improve their performance. The problems in mergers and acquisitions, currency risk hedging, working capital management areas posed some difficulties for the candidates

## PERFORMANCES OF CANDIDATES

The performance of the candidates deteriorated and was below the impressive performance achieved in the last two sittings and considered to be a retrogression in performance in the paper. The overall pass rate was 29% compared to the 61% in the previous session and past few trends of impressive pass rates.

The decline in performance reflected generally across all questions with the best pass rate being 55% in question two compared to the 73% best pass rate in question four in the last examination. The lowest pass rate was 13% in question three compared to 34% in question five in the last examination reflecting an overall drop in performance.

The Candidates experienced the difficulties in almost all the questions with only one question having a pass rate above 50%.

**Drivers of the good performance:**

- A good preparation by the few candidates who performed well as reflected in the quality of answers provided.
- The calibre and quality of some few candidates who sat for the paper appeared good as reflected in the quality of some of the answers those few candidates provided.
- Again, well-rounded preparation by some few candidates for both theory and calculations also contributed to their good performance
- As the new syllabus will be rolled out soon, some candidates having this in mind focused more in preparing to pass the paper to avoid writing again under the new syllabus

**NOTABLE STRENTHGS AND WEAKNESSES OF CANDIDATES**

**The following strengths were observed:**

- Well balanced preparations to cover both theory and calculations by the few candidates who did well
- Candidates generally showed better strength in the theory or essay-based questions
- Some candidates improved in their numbering and arrangement of answers and time management
- Better understanding in the requirements of the questions as there were few noted deviations to the requirements of the questions

**Observed reasons of the strengths:**

- Candidates' use of the examination reports and marking schemes published to guide themselves in the preparation for the exams and the writing of the paper
- Tuition providers' improvement in providing some level of quality tuition and also using the examination reports and marking schemes as a guide in the tuition process for those who attend the classes.
- Better access to learning materials via the ICAG and other third-party sources
- Previous writing experience and failure to pass in the paper providing a learning opportunity to rectifying the mistakes that caused earlier failures.

**The strengths can be enhanced by:**

- Better preparations by candidates by ensuring enough preparation time of not less than six months before writing the paper. This is very essential for average students rather than writing with little preparation within the 3 months window with poor preparation.
- Thorough review of the examiners' reports and marking schemes alongside proper study of the text and revision of the entire syllabus for robust grasp and understanding of the course.
- Proper planning and more time allocation for the examination

**Observed weaknesses demonstrated by candidates**

- Candidates writing the paper without any serious preparations for the exams as reflected in the poor quality of answers provided by such candidates.

- The three-diet programme a year is compelling tuition providers to start and end the syllabus within the 3-month period that poses time constraints for both tutors and students
- Answering of the examination questions using pencils contrary to the examination instructions
- The challenges in the risk management and hedging, mergers and acquisition, financial mathematics and working capital management posed problems to candidates
- Candidates generally showed more weakness in the quantitative aspect of the paper. Candidates therefore need to spend more time in this area to strengthen their knowledge, capacity and understanding in this area to improve their performance
- Rushing to write the paper with the aim of avoiding the paper under the new syllabus

**Remedies for observed weaknesses**

- Candidates should only sit for the paper when they are sure of adequate preparation for the exams. Allowing six months window for preparation and writing might help rather than trying to write in each of the 3 diets especially average candidates.
- Candidates should use permanent ink pens and not pencils
- Tuition providers should pay equal attention to all parts of the syllabus and try and create a six months window group for the average candidates who come for tuition to allow more time for the comprehensive coverage of the syllabus
- Candidates should ensure workings are clearly specified and real solutions or answers also clearly indicated. Cancel working after providing the solution to the question
- Spend more time practising the quantitative aspect of the paper or syllabus.

## QUESTION ONE

a) The Directors of Matiti Plc recently reviewed the company's performance in the 2023 financial year. The company's paid-up ordinary shares remained at the 2022 financial year figure of 3 million. The price of the ordinary shares was GH¢1.85 per share at the beginning of the year 2023 but dropped to GH¢1.25 per share at the close of the year 2023.

The company's net profit after-tax for the year 2023 was GH¢12 million, which was 20% more than that of the year 2022. The company maintained the existing dividend pay-out policy and declared dividend of GH¢0.40 per share for the year 2023.

While some of the directors showed concern about the drop in the price of the company's ordinary shares, others were of the view that it is better to focus on maximising the profits of the company.

**Required:**

In reference to the preamble above:

i) Explain the difference between ***profit maximisation*** and ***share price maximisation***. **(2 marks)**

ii) Explain to the directors **TWO (2)** conditions under which profit maximisation might not lead to share price maximisation. **(4 marks)**

iii) Compute the ***rate of return*** to shareholders and explain whether the dividend payment compensates for the price drop. **(4 marks)**

b) In the light of global debt crises, financial experts believe that Islamic financing is the most sustainable financing scheme going forward.

**Required:**

i) Explain **THREE (3)** principles of Islamic finance. **(6 marks)**

ii) Explain **TWO (2)** types of Islamic finance. **(4 marks)**

**(Total: 20 marks)**

## QUESTION TWO

Akonti Ltd is an indigenous baking company specialising in large scale production of cakes, bread, biscuit, hot dogs and doughnuts in the city of Bonwire. In the just ended Annual General Meeting (AGM), the shareholders were of the view that the company should shut down due to persistent losses. A final resolution on the future of the company is expected to be passed at the next AGM. The following are the financial statements of Akonti Ltd:

**Statement of Profit or Loss Account for the period:**

| | 2022 | 2021 | 2020 | 2019 | 2018 |
|---|---|---|---|---|---|
| | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 |
| Sales | 180,000 | 358,000 | 296,000 | 204,000 | 200,000 |
| Cost of Sales | 76,000 | 228,000 | 164,000 | 100,000 | 104,000 |
| **Gross Profit** | **104,000** | **130,000** | **132,000** | **104,000** | **96,000** |
| **Operating & other costs:** | | | | | |
| Staff cost | 189,000 | 285,000 | 220,000 | 155,000 | 100,000 |
| Rent and Rates | 4,000 | 11,000 | 15,000 | 5,000 | 11,000 |
| Finance Charges | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Depreciation | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| | 228,000 | 331,000 | 270,000 | 195,000 | 146,000 |
| Loss | **(124,000)** | **(201,000)** | **(138,000)** | **(91,000)** | **(50,000)** |

**Statement of financial position as at 31 December 2022**

| | GH¢'000 | GH¢'000 |
|---|---|---|
| **Non-current Asset (@ NBV)** | | |
| Land & Building | 950,000 | |
| Motor Vehicle | 420,000 | |
| Factory Equipment | 1,200,000 | 2,570,000 |
| **Current Assets** | | |
| Inventory | 94,000 | |
| Trade Receivables | 250,000 | |
| Marketable securities | 125,000 | |
| Cash at Bank | 15,000 | 484,000 |
| | | **3,054,000** |
| **Financed by:** | | |
| Share capital @GH¢1 | 1,000,000 | |
| Reserves | (124,000) | 876,000 |
| **Liabilities:** | | |
| **Non-current Liabilities** | | |
| Deferred Tax | 217,000 | |
| Long term loan | 1,659,000 | 1,876,000 |
| **Current Liabilities:** | | |
| Trade Creditors | 118,000 | |
| Other liabilities | 67,000 | |
| Short-term Loan | 117,000 | 302,000 |
| | | **3,054,000** |

**Additional information:**

i) The realisable values of some non-current assets will be:

| | GH¢'000 |
|---|---|
| Land & Building | 1,000,000 |
| Motor vehicle | 250,000 |
| Factory Equipment | 950,000 |

ii) 10% of trade receivables are expected to be irrecoverable.

iii) A portion of inventories relating to baking soda costing GH¢50,000,000 can now be sold for GH¢25,000,000.

The directors of Akonti Ltd believe that they can restore the company's lost glory within the next five years, if the following conditions are met:

1) A new factory equipment costing GH¢350,000,000 should be purchased. The equipment will have a five-year life with a scrap value of GH¢20,000,000. The new equipment has an inbuilt technology that will facilitate automation of the baking process leading to a reduction in staff time and an increase in output.
2) It is expected that sales revenue will increase from the 2022 levels by 20% per annum for the first 2 years and grow at a stable rate of 10% each year for the remaining three years.
3) Due to the new automation process, staff cost will reduce by 20% in the first two years and 10% in the next three years.
4) The new equipment can also be used to bake a special bread which is new to the Ghanaian market and expected to have a high demand. This additional bread will generate a net contribution of GH¢100,000,000 per annum for the next five years.
5) Cost of sales is expected to be 40% of each year's sales revenue.
6) The directors believe that they can renegotiate rent and rates to GH¢10,000,000 per annum over the next five years.
7) Working capital support is anticipated to be different from the 2022 levels. Working capital support will be made available at the start of each year and the final working capital will be recovered at the end of the fifth year. The projected balances for the next five years are given below:

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|
| GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 |
| 10,000 | 15,000 | 13,000 | 20,000 | 22,000 |

8) Akonti Ltd pays tax at the rate of 25% per annum and have an after-tax cost of capital of 12%. The new equipment qualifies for capital allowance on straight-line basis. Ignore capital allowance on the other assets.

**Required:**

a) State **FOUR (4)** reasons that may require the valuation of a business. **(4 marks)**

b) Determine the value of Akonti Ltd using the ***Net Asset Value approach***. **(8 marks)**

c) Using the ***discounted cash flow method*** advise whether Akonti Ltd should acquire the new equipment and continue operations. **(8 marks)**

**(Total: 20 marks)**

## QUESTION THREE

a) Mbano Ltd is borrowing GH¢2 million for two years. The nominal interest rate on the loan is 20% per annum. The loan is repayable in equal instalments payable at the end of each month for two years.

**Required:**

i) Distinguish between ***simple interest*** and ***compound interest***. **(2 marks)**

ii) Compute the monthly payment that will completely amortise the loan over two years. **(4 marks)**

iii) Compute the principal repayment for the first month. **(4 marks)**

b) The spot exchange rate between the US dollar and the Canadian dollar is currently USD 0.7411(buy) – 0.7432(sell) to CAD 1. An American subsidiary company expects to receive CAD 20 million in three months' time from a Canadian customer. FX market pundits predict that the CAD might strengthen against the USD. The company's management has decided to hedge the company's exposure to currency risk using exchange-traded currency options.

You have been tasked to set up an option hedge for the CAD 20 million receivable. You checked quotations for CME FX options and found the following for the CAD:

| **Exercise Price (USD per CAD 1)** | **Premium for Call Contracts (USD per CAD 1)** | **Premium for Put Contracts (USD per CAD 1)** |
|---|---|---|
| 0.7528 | 0.0085 | 0.0025 |

The contract size for the CME Canadian dollar option is CAD 100,000.

**Required:**

i) Explain how the company can construct a hedge for its currency exposure using the exchange-traded option. **(5 marks)**

ii) Suppose the company holds the option contract to expiration and the spot exchange rate closes at USD 0.7524(buy) – 0.7545(sell) to CAD 1. Compute the gain or loss from the company's position in the currency option contract. **(5 marks)**

**(Total: 20 marks)**

## QUESTION FOUR

a) Sintim Ltd is located in Mampong producing and selling a special yam species called 'puna'. The company intends to switch from the traditional harvesting of the yam to a more mechanised method. It will need GH¢60,000 to acquire a newly designed yam harvesting equipment now. A Consultant has provided the company with the following data:

| Forecast | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| Quantity sold (units) | | 1,867 | 1,655 | 2,602 | 3,112 | 1,842 |
| Selling price (GH¢) | 10.00 | | | | | |
| Variable cost/unit (GH¢) | 4.00 | | | | | |
| Total Fixed cost (GH¢) | 2,801 | | | | | |
| Annual Advertising (GH¢) | 800 | | | | | |
| Working capital Balance (GH¢) | 2,000 | 1,900 | 3,200 | 4,100 | 2,600 | |
| Replacement parts (GH¢) | 1,600 | 1,570 | 1,960 | 2,230 | 1,780 | |

**Additional information:**

1) Annual inflation on cash flows has been estimated as follows: selling price is 7%; variable cost is 3%; and fixed cost is 6%. Salesmen commission is 10% of annual sales.
2) A capital allowance of 25% can be claimed on the equipment which has a scrap value of GH¢8,500. Capital allowance follows the reducing balance method. The company pays tax and claims tax benefits at the rate of 25% per annum. Tax is paid 1 year in arrears.
3) Working capital is recovered at the end of the project life.
4) A total of GH¢30,000 has been committed to paying the company's Consultants who offer consultancy services on all projects of Sintim Ltd.
5) The company accepts only projects that pay a return of 13% per annum.

**Required:**

i) Advise the company on the buying of this equipment. Your decision should be supported with relevant computations. **(11 marks)**

ii) Explain **TWO (2)** limitations of Internal Rate of Return as an investment appraisal technique. **(4 marks)**

b) The efficient market hypothesis is a theory of market efficiency, based on research into share price behaviour in stock markets. The purpose of this research is to establish the extent to which capital markets show pricing efficiency.

**Required:**

According to this theory, describe the three possible levels or forms of market efficiency. **(5 marks)**

**(Total: 20 marks)**

## QUESTION FIVE

a) Kushiga Foods Ltd imports canned tomato paste for sale in Ghana. The company sells a box of canned tomato paste for GH¢250 which is 25% more of the purchase price. It costs GH¢10,000 to place an order for a consignment of the product and costs on average GH¢25 to hold a box of the product in inventory per annum. For the coming years, annual demand for the product is expected to be stable and is estimated to be 1,200,000 boxes. The company plans to buy 45,000 boxes in each consignment it will order.

The company buys and sells the product on credit. In 2023, the company bought 1,250,000 boxes of the product, costing a total of GH¢250 million. During the same year, it sold 1,200,000 boxes to earn GH¢300 million in revenue. The company's gross profit margin has remained constant at 40%.

The following are extracts from the company's statement of financial position for the past two years:

| | 2023 | 2022 |
|---|---|---|
| | **GH¢** | **GH¢** |
| Inventories | 34,128,000 | 33,061,500 |
| Trade receivables | 37,327,500 | 51,192,000 |
| Cash | 12,798,000 | - |
| Property, plant, and equipment | 86,386,500 | 79,987,500 |
| **Total assets** | **170,640,000** | **164,241,000** |
| | | |
| Trade payables | 43,726,500 | 40,527,000 |
| Bank overdraft | - | 5,332,500 |
| Long-term borrowings | 29,862,000 | 39,862,000 |
| Total equity | 97,051,500 | 78,519,500 |
| **Total liabilities and equity** | **170,640,000** | **164,241,000** |

**Required:**

i) Calculate the Economic Order Quantity and advise the company on whether it should go ahead with its planned order size of 45,000 boxes of canned tomato paste. **(5 marks)**

ii) Compute the company's cash conversion cycle and interpret the result. **(10 marks)**

b) The Ghana Stock Exchange believe it is essential to educate and provide information to all market participants. All market participants need to be aware of monthly market reports and the need to monitor key financial market indices such as the Ghana Stock Exchange Composite Index.

**Required:**

Explain ***Ghana Stock Exchange Composite Index***. **(5 marks)**

**(Total: 20 marks)**

## SUGGESTED SOLUTIONS

## QUESTION ONE

a)

i) Profit maximisation refers to the optimisation of the earnings per share of the company whilst stock price maximisation refers to the optimisation of the market price of the equity stock of the company. **(2 marks)**

ii) Although profit maximisation contributes to stock price maximisation, other factors like the projected earnings, the timing of the projected earnings, the riskiness of the projected earnings, the use of debt, and dividend policy influence a company's ability to maximise the price of its equity stock. When trends in these other factors are not favourable, profit maximisation might not lead to stock price maximisation.

- **Projected earnings:** Since the stock price embodies the value of future benefits to stockholders, projected earnings are more relevant to stock price maximisation than historical earnings. When historical increments in profits were achieved through short-term strategies or manipulation of earnings, that would not lead to improvement in the stock price.
- **The timing of projected earnings:** The timing of the projected earnings is as relevant to the maximisation of the stock price as the size of the earnings. As the concept of the time value of money suggests, if projected earnings from the company's investments will occur late, then the stock price of the company might not be maximised.
- **The riskiness of projected earnings:** The perception of risk inherent in the projected earnings affects the stock price. When the business risk inherent in projected earnings is high, profit maximisation might not lead to stock price maximisation.
- **The use of debt financing:** The riskiness inherent in projected earnings is partly influenced by financial risk arising from the use of debt financing. When there are higher fixed claims on future earnings due to higher debt financing, profit maximisation might not lead to stock price maximisation.
- **Dividend policy:** How profits are distributed or reinvested influences the market the retention of optimal amounts of earnings to achieve growth in future earnings. When the company's dividend policy is not optimal, profit maximisation might not lead to stock price maximisation.

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

iii) Computation of the rate of return to shareholders and interpretation

**Computation of the rate of return:**

$$Rate\ of\ return = \frac{Capital\ gains + Dividend}{Beginning\ stock\ price} \times 100\%$$

$$Rate\ of\ return = \frac{(1.25 - 1.85) + 0.40}{1.85} \times 100\% = -10.81\%$$

**Alternatively:**

$$Rate\ of\ return = Capital\ gains\ yield + dividend\ yield = -32.43\% + 21.62\%$$
$$= -10.81\%$$

$$Capital\ gains\ yield = \frac{Capital\ gains}{Beginning\ stock\ price} \times 100\% = \frac{1.25 - 1.85}{1.85} \times 100$$
$$= -32.43\%$$

$$\text{Dividend yield} = \frac{\text{Dividend}}{\text{Beginning stock price}} \times 100\% = \frac{0.40}{1.85} \times 100\% = 21.62\%$$

**Interpretation:**
The rate of return of minus 10.81% means that the value of the company's shareholders reduced by 10.81%. This means that the company was not able to enhance the wealth of its shareholders during that year. The dividend drop did not compensate the price drop.

**(Computation of rate of return = 3; Interpretation = 1; = 4 marks)**

b)

i) The main principles of Islamic finance include:

- Wealth must be generated from legitimate trade and asset-based investment (the use of money for the purposes of making money is expressly forbidden)
- Investment should have a social and an ethical benefit to wider society beyond pure return
- Risk should be shared
- Harmful activities (haram) should be avoided

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

ii) Types of Islamic finance

- Murabaha
- Ijara
- Mudaraba
- Musharaka
- Sukuk

**Murabaha:** In traditional western finance a customer would borrow money from a bank in order to finance activity, say the purchase of an asset. However, under Sharia the bank cannot charge interest. The murabaha form of financing is used as a sharia compliant alternative to loans. It is used widely by both consumers (for example to fund the purchase of household appliances or cars) and by businesses (for example, to fund the purchase of machinery, equipment, or raw materials).

**Ijara:** An ijara contract, involves the provision of goods or services to a customer in return for a series of rental payments. The contract gives the customer the right to use the asset for a period of time but the bank (or financing company) retains ownership of the asset. An ijara contract is similar to a conventional lease in which

the owner rents property or goods to a lessee for a specified number of periods in return for a series of pre-agreed rentals.

However, an ijara contract is different in that:

- The use of the asset is specified in the contract; and
- The lessor cannot charge penalty payments in the event of default.

There are different types of ijara arrangements including:

- ✓ Ijara arrangements ending with the lessee owning the asset. The ijara contract would not contain a promise to buy or sell the asset but either but the bank or customer would make a verbal agreement that the transfer of ownership might take place.
- ✓ Operating ijara (operating lease) which does not anticipate transfer of ownership of the leased asset but is a straightforward hiring arrangement.

In addition, some banks will offer ijara contracts with a second contract to sell the asset at the end of the ijara term. This can be used to allow customers to finance the acquisition of cars and houses.

**Mudaraba:** A mudaraba contract is a partnership in which one partner (the bank or rab al mal) provides capital and the other partner (the customer or mudarib) provides expertise to invest in a project. The bank plays no part in the management of the project and is merely a silent partner. Profits generated are distributed according to a predetermined rate. This is like the bank providing equity finance. The project might make a loss. In this case the bank loses out. The customer cannot be made to compensate the bank for this loss as that would be contrary to the mutual sharing of risk.

**Musharaka:** This is a joint venture or investment partnership between two parties who both provide capital towards the financing of new or established projects. Both parties share the profits on a pre-agreed ratio, allowing managerial skills to be remunerated, with losses being shared on the basis of equity participation.

**Sukuk:** Sukuk are shariah compliant "bonds". Typically, sukuk are certificates that represent ownership of an asset or its usufruct. (Usufruct refers to all of the benefits that the ownership of an asset would convey). This is debt finance but Islamic bonds cannot bear interest. Sukuk holders must have an ownership interest in the assets which are being financed. The sukuk holders' return for providing finance is a share of the income generated by the assets. Modern sukuk share many features with western securitisations.

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

**(Total: 20 marks)**

**EXAMINERS COMMENTS**

This question consisted of (a) and (b) parts. The (a) part tested the candidates' ability to explain the differences between profit maximisation and share price maximisation, the conditions under which profit maximisation might not lead to share price maximisation and also scenario analysis of share price drop vs. dividend growth for the candidates to examine and advice whether the dividend growth compensated the share price drop. This part received very good to average answers.

The (b) part of the question expected the candidates to apply their knowledge in Islamic finance principles and the types of Islamic Finance which carried a total of 10 marks. This part also received average responses with a lot of candidates struggling to use the right terminology in Islamic finance.

The overall performance was moderate with only 30% representing 212 candidates obtaining a pass mark or better far below the 72% pass rate for the same question in the previous sitting. It came out clearly that most candidates do not do a comprehensive study of the entire syllabus and concentrate more mainly on certain few known areas. The approach to the exams by the candidates should be holistic. It was the third best answered question in the paper.

**QUESTION TWO**

a) Reasons that may require a business to be valued

- **Merger and Take-over:** Companies in merger need valuation of business as a going concern to settle the purchase consideration. In case of take-over also the acquirer requires information about total value of the business such that he can determine the value of the proportion which he intends to buy.
- **Sale of Business:** For selling the whole business or any division of it, both the seller and buyer want to know the value of business to fix up the bargaining limit.
- **Liquidation:** In case of liquidation, the shareholders want to know the value of business from the liquidator to understand how much they would get by liquidation.
- **Going public** or stock market listing.
- Valuation is needed for **tax purposes.**

**(Any 4 points @ 1 mark each = 4 marks)**

b) **Net Asset Value Approach**

| | GH¢'000 | GH¢'000 |
|---|---|---|
| **Assets** | | |
| Land & Building | 1,000,000 | |
| Motor Vehicle | 250,000 | |
| Factory Equipment | 950,000 | 2,200,000 |
| | | |
| **Current Assets** | | |
| Inventory (w1) | 69,000 | |
| Trade Receivables (w2) | 225,000 | |
| Marketable securities | 125,000 | |
| Cash at Bank | 15,000 | 434,000 |
| | | 2,634,000 |
| **Less: Liabilities** | | |
| Trade Creditors | 118,000 | |
| other liabilities | 67,000 | |
| Short-term Loan | 117,000 | |
| Deferred Tax | 217,000 | |
| Long term loan | 1,659,000 | |
| | | (2,178,000) |
| **Net Asset** | | **456,000** |

**So 456,000,000 divided by 1 billion shares will give you GH¢ 0.456 per share**

**Conclusions:** The value is GH¢0.456 per share

**Workings**

- (w1) Inventories = 94,000 – 50,000 + 25,000 = 69,000
- (w2) Trade Receivables = 250000 X (1-0.1) = 225,000

**(Marks are evenly spread using ticks = 8 marks)**

c) **Discounted cash flow method**

| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 | GH¢'000 |
| Sales **(w1)** | | 216,000 | 259,200 | 285,120 | 313,632 | 344,995 |
| Additional sales | | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Cost of Sales (40% of sales) | | (86,400) | (103,680) | (114,048) | (125,453) | (137,998) |
| Staff cost **(w2)** | | (151,200) | (120,960) | (108,864) | (97,978) | (88,180) |
| Rent and Rates | | (10,000) | (10,000) | (10,000) | (10,000) | (10,000) |
| Depreciation **(w3)** | | (66,000) | (66,000) | (66,000) | (66,000) | (66,000) |
| | | 2,400 | 58,560 | 86,208 | 114,202 | 142,817 |
| Tax @ 25% | | (600) | (14,640) | (21,552) | (28,550) | (35,704) |
| Add back Depreciation | | 66,000 | 66,000 | 66,000 | 66,000 | 66,000 |
| Investment: | | | | | | |
| Initial cost | (350,000) | | | | | |
| Scrap value | | | | | | 20,000 |
| working capital | (10,000) | (5,000) | 2,000 | (7,000) | (2,000) | 22,000 |
| **Free cash flows** | **(360,000)** | **62,800** | **111,920** | **123,656** | **149,651** | **215,113** |
| Disc. Factor @12% | 1.000 | 0.893 | 0.797 | 0.712 | 0.636 | 0.567 |
| **Disc. Free Cash Flows** | **(360,000)** | **56,071** | **89,222** | **88,016** | **95,106** | **122,061** |

**NPV** **90,476**

Conclusion:
Akonti Ltd should buy the new equipment and continue operations

**(Marks are evenly spread using ticks = 8 marks)**

**Workings**

- **(W1) Sales**

| Sales (2022 sales = 180,000) | GH¢'000 |
|---|---|
| Year 1 (180,000 X 1.2) | 216,000 |
| Year 2 (216,000 X 1.2) | 259,200 |
| Year 3 (259,200 X 1.1) | 285,120 |
| Year 4 (285,120 X 1.1) | 313,632 |
| Year 5 (313,632 X 1.1) | 344,995 |

- **(W2) Staff cost**

| Staff Cost (2022 staff cost = 189,000) | GH¢'000 |
|---|---|
| Year 1 [189,000 X (1-0,2)] | 151,200 |
| Year 2 [151,200 X (1-0.2)] | 120,960 |
| Year 3 [120,960 X (1-0.1)] | 108,864 |
| Year 4 [108,864 X (1-0.1)] | 97,978 |

Year 5 [97,978 X (1-0.1)] 88,180

- **(W3) Depreciation**

$$\frac{350,000,000 - 20,000,000}{5} = 66,000,000$$

**(Marks are evenly spread using ticks = 8 marks)**

**(Total: 20 marks)**

**EXAMINERS COMMENTS**

The performance of the candidates in this question saw some level of improvement compared to the last sitting. This question was a combination theory and calculations.

The (a) part expected candidates to exhibit their knowledge and understanding of the reasons there might be a need for business valuation which received good responses from the candidates and was generally well answered.

The (b) part expected the candidates to apply their knowledge in business valuation to determine the value of Akonti Ltd using the Net Assets Value approach based on the information provided on the assets and liabilities and current adjusted values of some of them. This again also received good answers as most candidates demonstrated clear understanding of the question and provided their own valuation using the requirement of the question

The (c) part was on investment appraisal decision in the acquisition of a new equipment and expected the candidates to use the discounted cash flow method to appraise the project and advise whether the company should acquire the new equipment to continue its operations. This part also received good answers.

Even though the question appears loaded and voluminous it attracted the best answers and was the best answered question with 55% of the candidates representing 385 candidates obtaining a pass mark or better and was an improvement over last sitting where only 45% passed in that question. The pass rate was still below the overall best pass rate of 73% in question four in the last sitting.

**QUESTION THREE**

a)

i) ***Simple interest*** is where the interest is a fixed percentage of the original amount borrowed or invested (the pricing) whiles ***Compound interest*** is where the interest is based on the amount borrowed plus the interest accrued to date.

**(2 marks)**

ii) Computation of the quarterly payment that will completely amortise the loan over two years.

The monthly payments form an ordinary annuity, the present value of which is equal to the loan principal. Thus, the present value formula for ordinary annuity can be used to derive the monthly payments:

$$\text{PVA} = \text{PMT}\left[\frac{1 - \frac{1}{\left(1 + \frac{i}{m}\right)^{n*m}}}{\frac{i}{m}}\right]$$

$PVA_n$ = Loan principal = GH¢2,000,000

Annual interest, i = 20%

Time (in years), n = 2

Frequency of payments per annum, m = 12

$$\text{GH¢}2{,}000{,}000 = \text{PMT}\left[\frac{1 - \frac{1}{\left(1 + \frac{0.2}{12}\right)^{2\times 12}}}{\frac{0.2}{12}}\right]$$

$$\text{GH¢}2{,}000{,}000 = \text{PMT} \times 19.64798565$$

$$\text{PMT} = \frac{\text{GH¢}2{,}000{,}000}{19.64798565} = \mathbf{GH¢101,791.61}$$

**(Workings = 3 marks; Final answer = 1 mark = 4 marks)**

iii) Computation of the principal repayment for the first month.

$$\text{Period Principal Repayment} = \text{Instalment} - \text{Period Interest}$$

$$\text{Period Principal Repayment} = \text{GH¢}101{,}791.61 - \text{GH¢}33{,}333.33 = \text{GH¢}68{,}458.28$$

$$\text{Period Interest} = \text{Beginning Loan Balance} \times \frac{i}{m}$$

$$\text{Period Interest} = \text{GH¢}2{,}000{,}000 \times \frac{0.2}{12} = \text{GH¢}33{,}333.33$$

**(Workings = 3 marks; Final answer = 1 mark = 4 marks)**

b)

i) How the company can create a currency options hedge?

**Step 1: Determine the currency exposure.**
As the company has a CAD receivable in three months' time, it would have to sell the CAD in three months' time.

**Step 2: Decide whether a call or a put option is required to hedge the exposure.**
The company would have to buy put options on the CAD to obtain the right to sell the Canadian dollars that would be received in three months' time.

**Step 3: Select an exercise price for the option.**
In this case, there is only one exercise price available, so the company may have to decide on that.

**Step 4: Determine the number of contracts to buy.**
The company would buy multiples of the option contract to cover its underlying exposure. To hedge the CAD20 million, the company would buy 200 put contracts (20,000,000 / 100,000).

**Step 5: Pay the required premium to acquire the option contracts.**
The company would pay a total of USD50,000 in premiums for the 200 put contracts (200 x CAD100,000 x USD0.0025/CAD)

**(1.5 marks for each relevant step up to step 4 = 5 marks)**

ii) Computation of the gain or loss from the currency option contract.

$$Gain\ or\ (loss) = Receipts - Payments$$

On expiration, the company would decide whether to exercise the option and sell the CAD for the exercise price or abandon the option and rather sell the CAD in the spot market for the spot market price.

If the spot exchange rate closes at USD 0.7524 – 0.7545 to CAD 1 on the expiration date, then it would be beneficial to exercise the option as the company can sell the CAD for a higher exercise price (USD0.7528/CAD) than it would get at the bid rate of the spot market dealers (USD0.7524/CAD).

With the company exercising the option, the receipts will be the exercise price for the CAD sold under the option and the payments will be the sum of the premium already paid and the underlying asset value that would be given up (i.e., the spot market value of the CAD sold).

$$\text{Gain or (loss) per unit} = 0.7528 - 0.0025 - 0.7524 = -0.0021$$

$$\text{Total gain or (loss)} = \text{USD} - \frac{0.0021}{\text{CAD}} \times 200 \times \text{CAD}100{,}000 = \text{USD} - 42{,}000$$

**(Workings = 4; Final answer = 1 mark = 5 marks)**

**(Total: 20 marks)**

**EXAMINERS COMMENTS**

Question three was on financial mathematics expecting the candidates to exhibit and apply their knowledge in simple and compound interest, loan amortisation and repayments amounts on (a) part which received poor answers as majority of candidates performed poorly in this area except some few who did well.

The (b) part centred on hedging using options and candidates were expected to apply their knowledge and skills to determine the type of hedging option whether PUT or CALL option was appropriate to the given scenario to help provide an exchange traded hedging solution. Additionally, they were also expected to compute the gain or loss supposing the company held the option contract to expiration with the spot exchange rate in the market provided. This question posed challenges to candidates but some candidates were able to provide reasonable hedging solution and scored some marks.

The question on overall basis was poorly answered with only 13% pass rate and a further significant drop from the 37% pass rate in the previous sitting. It was the worst answered question. Some candidates did not even attempt the question. This raises again further question on general poor performance of candidates in this area. A research might be needed to find solution to this issue.

**QUESTION FOUR**

a)

i) **NPV**

| | Year 0 GH¢ | Year 1 GH¢ | Year 2 GH¢ | Year 3 GH¢ | Year 4 GH¢ | Year 5 GH¢ | Year 6 |
|---|---|---|---|---|---|---|---|
| Sales (w1) | | 19,977 | 18,948 | 31,876 | 40,792 | 25,835 | |
| Variable cost (w2) | | (7,692) | (7,023) | (11,373) | (14,010) | (8,542) | |
| Fixed cost (w3) | | (2,969) | (3,147) | (3,335) | (3,536) | (3,748) | |
| Sales commission (10% of sales) | | (1,998) | (1,895) | (3,188) | (4,079) | (2,584) | |
| Advertising | | (800) | (800) | (800) | (800) | (800) | |
| Depreciation (w4) | | (15,000) | (11,250) | (8,438) | (6,328) | (10,484) | |
| Taxable cashflows | | (8,481) | (5,167) | 4,742 | 12,039 | (322) | |
| Tax @ 25% | | | 2,120 | 1,292 | (1,186) | (3,010) | 81 |
| Add back: Depreciation | | 15,000 | 11,250 | 8,438 | 6,328 | 10,484 | |
| Investment: | | | | | | | |
| Initial cost | (60,000) | | | | | | |
| Scrap value | | | | | | 8,500 | |
| Working capital | (2,000) | 100 | (1,300) | (900) | 1,500 | 2,600 | |
| Replacement parts | (1,600) | (1,570) | (1,960) | (2,230) | (1,780) | | |
| **Annual net cashflows** | **(63,600)** | **5,049** | **4,944** | **11,341** | **16,901** | **18,253** | **81** |
| Discount factor @ 13% | 1.000 | 0.885 | 0.783 | 0.693 | 0.613 | 0.543 | 0.480 |
| **Discounted NCF** | **(63,600)** | **4,468** | **3,872** | **7,860** | **10,366** | **9,907** | **39** |
| | | | | | | | |
| **NPV** | **(27,089)** | | | | | | |

**Decision: the equipment should not be bought.**

**(Marks are evenly spread using ticks = 11 marks)**

**Note:**

1. Sales units is used throughout based on the idea that Sintim Ltd produces what can be sold, thus, all units produced are sold.
2. Fixed cost does not rise with the level of activity. Fixed cost may change due to inflation, hence inflate it with its inflation rate.
3. The asset replacement is treated as capital expenditure (CAPEX) and not part of revenue expenditure.
4. The GH¢30,000 being paid to consultants is committed cost and therefore irrelevant cost.

**Workings**

| **(w1) Sales** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
|---|---|---|---|---|---|
| Selling Price | 10 | 10 | 10 | 10 | 10 |
| Inflation (1+g)^n | 1.070 | 1.145 | 1.225 | 1.311 | 1.403 |
| | 10.70 | 11.45 | 12.25 | 13.11 | 14.03 |
| Quantity sold | 1,867 | 1,655 | 2,602 | 3,112 | 1,842 |
| **Sales Value** | **19,977** | **18,948** | **31,876** | **40,792** | **25,835** |

| **(w2) Variable cost** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
|---|---|---|---|---|---|
| VC per unit | 4 | 4 | 4 | 4 | 4 |
| Inflation (1+g)^n | 1.030 | 1.061 | 1.093 | 1.126 | 1.159 |
| | 4.12 | 4.24 | 4.37 | 4.50 | 4.64 |
| Quantity sold | 1,867 | 1,655 | 2,602 | 3,112 | 1,842 |
| **Variable cost** | **7,692** | **7,023** | **11,373** | **14,010** | **8,542** |

| **(w3) Fixed cost** | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Fixed cost | 2,801 | 2,801 | 2,801 | 2,801 | 2,801 |
| Inflation (1+g)^n | 1.06 | 1.12 | 1.19 | 1.26 | 1.34 |
| Fixed Cost | 2,969 | 3,147 | 3,335 | 3,536 | 3,748 |

**(w4) Depreciation**

| | | GH¢ |
|---|---|---|
| | Cost | 60,000 |
| **Yeaar 1** | **Depreciation @25%** | **(15,000)** |
| | | 45,000 |
| **Yeaar 2** | **Depreciation @25%** | **(11,250)** |
| | | 33,750 |
| **Yeaar 3** | **Depreciation @25%** | **(8,438)** |
| | | 25,313 |
| **Yeaar 4** | **Depreciation @25%** | **(6,328)** |
| | | 18,984 |
| | **Scrap value** | **(8,500)** |
| **Year 5** | **Depreciation** | 10,484 |
| | | **(10,484)** |

ii) Limitations of Internal Rate of Return as an investment appraisal technique

- it does not consider the project duration
- It ignores the size of the project
- Very difficult to compute
- Future cost of the project is ignored

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

b) Forms of market efficiency
   **Weak form:** This form of market efficiency theory suggests that current market prices of securities reflect their previous or historical prices. Thus, it means that market participants who are buying and selling securities by analysing their historical data should earn normal returns. Hence, any new price changes in future can only take place if new information becomes publicly available.

   According to this theory, popular investing strategies like technical analysis or momentum trading will not be able to beat the market on a consistent basis. But, it proposes that there is room for earning excess returns by using fundamental analysis.

   **Semi-strong form:** In a semi-strong variation of an efficient market, the current prices of securities represent all information that is publicly available. It includes historical information like price, volume and more. This form of theory assumes that securities make quick adjustments in response to any newly available information. Thus, traders won't be able to outperform the market by trading on such information.

   It dismisses both technical and fundamental analysis since any information gathered by using these techniques will already be available to other investors. Only private information that is unavailable in the market would be useful for an investor to have the edge over others.

   **Strong form:** This form of market efficiency theory states that market prices of securities reflect both public and private information. Consequently, investors will not be able to beat the market by trading on any private information since all such information will already be factored into the market prices of the securities.

**(1.33 marks each = 5 marks)**

**(Total: 20 marks)**

**EXAMINERS COMMENTS**

Question four was also in two parts. The (a) part was on investing appraisal on the Agric business of switching from traditional yam harvesting technique to a mechanised method of yam harvesting. Candidates were tested on their ability to apply their knowledge in investment appraisal technique and based on their evaluation advise whether it was a prudent financial strategy to embark on that initiative. It further required them to explain limitations of internal rate of return. It was generally well answered and provided the needed advice based on their computations with most candidates clearly understanding what to do and the process even though some experience some challenges in providing the entire solution or getting the computations right.

The (b) which was theory in nature tested their knowledge on the possible three forms of market efficiency. This received a wide range of answers ranging from very good

answers to poor answers. Some candidates had no clue to what that was and provided responses that came to mind.
The pass rate was 48% which was a significant drop compared to the 73% pass rate in last sitting but was the second-best answered question.

**QUESTION FIVE**

a)

i) **Advice on the order size**

The optimal order size is 30,984 boxes based on the EOQ model:

$$EOQ = \sqrt{\frac{2 \times D \times C_0}{C_H}}$$

Annual demand, D = 1,200,000
Ordering cost, $C_0$ = GH¢10,000
Holding cost, $C_H$ = GH¢25

$$EOQ = \sqrt{\frac{2 \times 1{,}200{,}000 \times GH¢10{,}000}{GH¢25}} = 30{,}984 \text{ boxes}$$

The company will have to order 30,984 boxes of canned tomato paste to minimise inventory costs. If the company goes ahead with the planned order size of 45,000 its inventory cost would be higher. Thus, the company should not buy the planned order size of 45,000 but rather the economic order size of 30,984.

**(Computation of EOQ = 4 marks; Advice = 1 mark = 5 marks)**

ii) Computation and interpretation of cash conversion cycle

Computation of cash conversion cycle:

$$\text{Inventory turnover days (ITD)} = \frac{\text{Average inventory}}{\text{Cost of sales}} \times 365 \text{ days}$$

$$ITD = \frac{(33{,}061{,}500 + 34{,}128{,}000)/2}{(1 - 0.4) \times 300{,}000{,}000} \times 365 = \frac{33{,}594{,}750}{180{,}000{,}000} \times 365 = 68 \text{ days}$$

$$\text{Receivables turnover days (RTD)} = \frac{\text{Average receivables}}{\text{Sales revenue}} \times 365\ days$$

$$RTD = \frac{(51{,}192{,}000 + 37{,}327{,}500)/2}{300{,}000{,}000} \times 365 = \frac{44{,}259{,}750}{300{,}000{,}000} \times 365 = 54 \text{ days}$$

$$\text{Payables turnover days (PTD)} = \frac{\text{Average payables}}{\text{Purchases}} \times 365 \text{ days}$$

$$PTD = \frac{(40{,}527{,}000 + 43{,}726{,}500)/2}{250{,}000{,}000} \times 365 = \frac{42{,}126{,}750}{250{,}000{,}000} \times 365 = 62 \text{ days}$$

$$\text{Cash conversion cycle} = \text{ITD} + \text{RTD} - \text{PTD}$$

$$\text{Cash conversion cycle} = 68 \text{ days} + 54 \text{ days} - 62 \text{ days} = 60 \text{ days}$$

**Interpretation:**
The cash conversion cycle being 60 days means that it will take the company 60 days to receive cash from sales after it has paid for its purchases. This implies that the company would need to pre-finance its purchases for about 60 days before getting funds from its credit customers.

**(Computation of ITD = 2 marks; Computation of RTD = 2 marks; Computation of PTD = 2 marks; Computation of CCC = 2 marks; Interpretation = 2 marks; = 10 marks)**

b) The Ghana Stock Exchange Composite Index is a market capitalisation-weighted index that tracks the performance of all listed stocks on the Ghana Stock Exchange (GSE). It provides a comprehensive measure of the overall state of the Ghanaian stock market and represents the value of all listed stocks on the exchange, adjusted for the number of outstanding shares. The index is calculated using the market capitalisation of all listed stocks and is updated regularly to reflect changes in the value of the underlying stocks. It is widely used by investors, analysts, and financial institutions to gauge the performance of the stock market and make investment decisions.

**(5 marks)**

**(Total: 20 marks)**

**EXAMINERS COMMENTS**
This question on (a) part examined the candidates' ability to demonstrate and apply their knowledge in Economic Order Quantity computations and cash conversion cycle in working capital management decision making scenario. Some good answers were received but candidates generally had an idea of what was expected but performance was poor to average even though some few candidates scored very good marks.

The (b) part tested the candidates' knowledge on the Stock Exchange Composite Index and a number of them were found struggling to provide good responses even though some few candidates were on top of this area and scored the maximum marks. Candidates should take more time to cover the entire syllabus to avoid struggling to find suitable answers when questions are asked from any part of the syllabus. This question also appeared overloaded with a lot of information.

The overall pass rate was 28% lower than the 34% achieved in the previous sitting. It was the second worst answered question in the paper.