

**MAY 2020 PROFESSIONAL EXAMINATION  
FINANCIAL MANAGEMENT (PAPER 2.4)  
CHIEF EXAMINER'S REPORT, QUESTIONS AND MARKING SCHEME**

**STANDARD OF THE PAPER**

The quality and standard of the paper was generally good and covered both quantitative and theory or essay related questions to test candidates' knowledge in both areas.

The distribution of the questions was in line with the syllabus in terms of coverage but shifted more towards quantitative related questions. The quantitative aspect covered 78% whilst the theory or essay aspect covered only 22%. This was a shift from the last two sittings where it was quantitative (64%) and theory (36%) for November 2019 and quantitative (57%) and theory (43%) for May 2019 paper. The trend will have to be relooked at in subsequent papers where at least the essay or theory should cover not less than 30%.

The questions were generally clear and easy to understand and apply by candidates who prepared well and had knowledge of the subject but posed difficulties to ill prepared candidates. No sub-standard questions were noted in the paper except over concentrated question in one area of the syllabus and the quality of questions were considered appropriate for this level.

Marks allocations were also considered good with exception of low number of theory questions and marks.

In terms of marking scheme, it was reviewed and aligned to the question paper. Alternative solutions were also provided where necessary to accommodate various approaches to answering the questions.

**PERFORMANCE OF CANDIDATES**

<b>DETAILS</b>	<b>NUMBER OF CANDIDATES</b>	<b>PERCENTAGE (%)</b>
Pass	69	13
Fail	473	87
Total	542	100

The performance of the candidates showed a deterioration with the overall pass rate dropping to 13% compared to the 29% in the previous sitting but better than the 7% attained in the May 2019 paper. This could partially be attributed to the negative impact of the COVID 19 on candidate's preparation and nervousness towards safety.

The possible reasons for some poor performance were as follows:

- Poor preparation by some candidates that could be partially due to COVID 19 constraints
- Poor questions answering and time management skills

- Poor, labelling of questions, handwriting and use of faded pens still featured notwithstanding the consistent highlighting of this problem
- Weak knowledge in answering the main quantitative questions carrying high marks.
- Weak grasp of the quantitative knowledge on Business valuation and operating leverage and financial leverage
- Complacency on the part of some candidates due to the good performance at the last examinations

### **NOTABLE STRENGTHS AND PERFORMANCE OF CANDIDATES**

The 13% of the candidates who passed the paper and those who did well in some questions exhibited the following strengths:

- Noticeable improvement in the understanding of the requirements of the questions
- Better appreciation and preparation in the quantitative areas of the syllabus which covered over 70% of the questions
- Improvement in understanding and application of what was studied showed up again
- Growth in knowledge and understanding of how to handle applied questions in the exams

#### **Observed reasons of the strengths:**

- Enhancement in the quality of digital access to study material and knowledge in the subject area
- Improvement in the usage of non-contact quality study materials through the use of technology during the challenging COVID-19 period
- Better preparation, understanding and practice of more quantitative related questions.

#### **The strengths can be enhanced by;**

- Review of the study materials relevant to the new syllabus
- Further improvement on the contactless digital channels of study
- Knowledge and experience sharing by good performing past candidates

#### **Observed weaknesses demonstrated by candidates:**

- Poor grasp of quantitative aspect of the new syllabus by some candidates
- Still continuous poor numbering of answers to questions making it difficult for examiners
- Poor handwriting and faded pens making reading and marking difficult still prevalent

#### **Remedies for observed weaknesses:**

- Continuous Performance feedback sessions by the Institute or through the various tuition centres and digital channels
- More hands on and practice on exercises and past questions,
- Use of modern tuition technology to reach out to majority of candidates including those outside Accra

- One on one or written feedback to the very poor performing candidates to create alertness and seriousness in candidates

**Summary of Performance on Question Basis**

<b>QUESTION</b>	<b>PASS</b>	<b>%</b>	<b>FAIL</b>	<b>%</b>	<b>TOTAL</b>	<b>%</b>
Question 1	56	10	485	90	541	100
Question 2	27	5	514	95	541	100
Question 3	94	17	447	83	541	100
Question 4	122	23	419	77	541	100
Question 5	356	66	185	34	541	100
Overall pass	69	13	472	87	541	100

## QUESTION ONE

- a) K-Force Ltd, a newly established security company, has constituted its first board of directors. The directors are expected, among others, to take financial decisions in the areas of investment, financing, and dividend payment. A consultancy firm has been engaged to run an orientation program for the directors in the coming week.

You work with the consultancy firm that has been engaged to run the orientation program for the new directors. You have been asked by your boss to prepare briefing notes on the specific roles the directors are expected to play in the three fundamental decision areas and the constraints that government policies might impose on them.

### Required:

Prepare a briefing note on the nature of the three fundamental decision areas. Specifically, the briefing notes should cover the objective of each class of decision; **TWO (2)** specific decisions the directors are expected to take in each class of financial decisions; and **TWO (2)** factors in the external environment they should consider when making financial decisions.

**(10 marks)**

- b) Firm A and Firm B are both subsidiary companies of Groupe Trojan Electronics. The directors of Groupe Trojan Electronics are reviewing the capital structure of the two subsidiary companies. You have been engaged to advise the directors on the appropriate capital structure for the subsidiaries.

You have obtained extracts from the financial results of the two companies for the past financial year and projection of the annual results for the current year, which is in its first quarter.

	Projected Results – 2019		Historical Results – 2018	
	Firm A	Firm B	Firm A	Firm B
Sales units (millions)	7.2	3.6	12	6
Price per unit (GH¢)	40	62	40	62
	<b>GH¢'million</b>	<b>GH¢'million</b>	<b>GH¢'million</b>	<b>GH¢'million</b>
Sales revenue	288.00	223.20	480.00	372.00
Variable costs	172.80	44.64	288.00	74.40
Fixed costs	40.00	128.00	40.00	128.00
Total operating costs	212.80	172.64	328.00	202.40
Operating profits	75.20	50.56	152.00	169.60
Interest expense	35.00	110.00	35.00	110.00
Profit before tax	40.20	(59.44)	117.00	59.60
Tax	10.05	(14.86)	29.25	14.90
Profit after tax	30.15	(44.58)	87.75	44.70

### Required:

- i) Compute the degree of operating leverage for each of the two companies. Based on the degree of operating leverage you obtain, advise the directors on the relative level of business risk associated with the two subsidiaries and the implication of that for capital structure design. **(5 marks)**

- ii) Compute the degree of financial leverage for each of the two companies. Based on the degree of financial leverage you obtain, advise the directors on the relative level of financial risk associated with the two subsidiaries and the implication of that for capital structure design. **(5 marks)**

**(Total: 20 marks)**

## QUESTION TWO

Restwell Ltd (Restwell), a hotel and leisure company is currently considering taking over a smaller private limited liability company, Staygood Ltd (Staygood). The board of Restwell is in the process of making a bid for Staygood but first needs to place a value on the company. Restwell has gathered the following data:

<b>Restwell</b>	
Weighted average cost of capital	12%
P/E ratio	12
Shareholders' required rate of return	15%
<b>Staygood</b>	
Current dividend payment (GH¢)	0.27
Past five years' dividend payments (GH¢)	0.15,0.17,0.18, 0.21,0.23
Current EPS	0.37
Number of ordinary shares issued	5 million

The required rate of return of the shareholders of Staygood is 20% higher than that of Restwell due to the higher level of risk associated with Staygood. Restwell estimates that cash flows at the end of the first year will be GH¢2.5 million and these will grow at an annual rate of 5%. Restwell also expects to raise GH¢5 million in two years' time by selling off hotels of Staygood that are surplus to its needs.

### Required:

Estimate values for Staygood using the following valuation methods:

- i) Price/earnings ratio valuation. **(6 marks)**  
 ii) Gordon growth model. **(8 marks)**  
 iii) Discounted cash flow valuation. **(6 marks)**

**(Total: 20 marks)**

### QUESTION THREE

- a) Odapagyan Foods Ltd is borrowing GH¢500,000 to finance a project involving an expansion of its existing factory. It has obtained an offer from Sika Bank. The terms of the loan facility are as follows:

Annual interest rate: 22%  
 Duration: 2 years  
 Interest method: compound interest with quarterly compounding  
 Payment plan: equal instalments at the end of each quarter

**Required:**

- i) Compute the quarterly instalment. **(3 marks)**
- ii) Prepare a loan amortisation schedule to show the periodic interest charges, instalment payments, principal payments, and balance of the loan at the end of each quarter. **(7 marks)**
- b) Asanka Ghana Ltd is a medium size business in Ghana that is currently borrowing GH¢1,000,000 from North East Bank at a floating or variable interest rate basis at Ghana Reference Rate (GRR) plus 3% margin which is market determined on monthly basis. This makes their monthly interest payment volatile depending on where GRR is at the end of the month. They are rather interested in fixed interest payment at the end of the month to manage this volatility.

OTI Bank Ghana Ltd has agreed to do an Interest rate Swap with Asanka where OTI Bank Ghana Ltd pays the variable rate to Asanka but Asanka pays them a fixed rate of 21% per annum paid monthly.

The table below shows the GRR for the last 6 months:

Month (A)	GRR (B)	Interest (Variable) (C)	Fixed Rate (D)	Interest (Fixed) (E)	Net Settlement (F)
1	16%		21%		
2	18%		21%		
3	20%		21%		
4	19%		21%		
5	18%		21%		
6	17%		21%		

**Required:**

- i) Calculate the variable interest, fixed interest and net settlement under columns (C), (E) and (F) in the table above. **(8 marks)**
- ii) Will you describe this strategy as an interest rate hedge? Explain. **(2 marks)**

**(Total: 20 marks)**

## QUESTION FOUR

Sabir Company is considering whether to invest in a project whose details are as follows. The project will involve the purchase of equipment costing GH¢2,000,000. The equipment will be used to produce a range of products for which the following estimates have been made.

Year	1	2	3	4
Average unit sales price	GH¢73.55	GH¢76.03	GH¢76.68	GH¢81.86
Average unit variable cost	GH¢50.00	GH¢50.00	GH¢45.00	GH¢45.00
Sales volume (units)	65,000	110,000	125,000	80,000

Incremental fixed costs are GH¢1,200,000 per annum. The sales prices allow for expected price increases over the period. However, cost estimates are based on current costs, and do not allow for expected inflation in costs. Inflation is expected to be 3% per year for variable costs and 4% per year for fixed costs. The incremental fixed costs are all cash expenditure items. Tax on profits is at the rate of 30%, and tax is payable in the same year in which the liability arises.

Sabir Company uses a four-year project appraisal period, but it is expected that the equipment will continue to be operational and in use for several years after the end of the first four-year period.

The company's cost of capital for investment appraisal purposes is 10%. Capital projects are expected to pay back within two years on a non-discounted basis and within three years on a discounted basis. Tax allowable depreciation will be available on the equipment at the rate of 25% per year on a reducing balance basis. Any balancing allowance or balancing charge is not attributed to a project unless the asset is actually disposed of at the end of the project period.

### Required:

- Calculate the *net present value (NPV)* of the project. (11 marks)
- To the nearest month, calculate the *non-discounted payback* period and the *discounted payback* period (4 marks)
- Explain the meaning of *market volatility* in financial markets. (3 marks)
- Explain the difference between a *bull* and *bear market*. (2 marks)

**(Total: 20 marks)**

## QUESTION FIVE

a) Explain **THREE (3)** motives for holding cash. **(3 marks)**

b) Innovate Ghana Ltd is a dealer in household consumables in Ghana. It currently sells on only cash basis. The company's current annual sales are GH¢10 million. The operating cost structure is as follows:

- Cost of sales 55% of sales
- Staff cost 10% of sales
- Marketing and distribution cost 15% of sales

Management in a meeting concluded that introducing credit sales will help boost sales in the light of the current tightness in liquidity in the market, the drive by other competitors, and pressure from the sales team.

It is projected that total sales will grow by 50% solely from the credit sales. The customers are offered 1-month credit and a new credit department is set up to assess and monitor this credit sales. The monthly cost of running this credit department is GH¢20,000 and bad debts is expected to be 4% of the credit sales.

To finance this credit, Innovate Ghana Ltd will borrow at an interest rate of 25% per annum.

### **Required:**

i) Calculate the total profit before tax before the introduction of the new policy. **(4 marks)**

ii) Calculate the total profit before tax after the introduction of the new policy. **(6 marks)**

iii) Advise management whether the initiative should be undertaken. **(3 marks)**

c) Explain **FOUR (4)** differences between a *foreign currency swap* and an *interest rate swap*. **(4 marks)**

**(Total: 20 marks)**

## SOLUTION TO QUESTIONS

### QUESTION ONE

#### a) Investing decisions

Investing decisions are decisions that relate to the acquisition and disposition of assets that would generate cash flows for the firm. The objective of investing decisions is to achieve optimal allocation of limited resources to investment opportunities.

Directors are expected to make investing decisions such as the following:

- Deciding on growth strategy; whether to employ an internal growth strategy, which involves pursuing internally developed projects, or external growth strategies, which involves acquisitions and mergers
- Deciding on the proportion of the components of assets needed to achieve the objectives of the firm. For instance, the proportion of property, plant and equipment in the total portfolio of assets.
- Deciding on the replacement of assets.
- Deciding on disinvestments.
- Deciding on how much to allocate to competing investment opportunities.

**[Marks allocation: objective = 1; 2 decisions @ 1 mark each = 2 marks]**

**(3 marks)**

#### Financing

Financing decisions are related to the mix of the various types of finance the firm should use. The objective of financing decisions is to minimise the risk and cost of finance.

The directors are expected to make financing decisions such as the following:

- Deciding on the blend of equity and debt in the financing structure.
- Deciding on the proportion of prior-charge capital in total capital.
- Deciding on the method of issuing new securities.
- Deciding on whether to obtain a stock market listing.
- Deciding on whether to issue securities in international markets.

**[Marks allocation: objective = 1; 2 decisions @ 1 mark each = 2 marks]**

**(3 marks)**

#### Dividend

Dividend decisions are related to payment of dividend and retention of earnings for reinvestment. The objective of dividend decisions is to achieve a balance between meeting shareholders' expectation of current dividend and reinvesting enough earnings to achieve targeted growth.

The directors are expected to make dividend decisions such as the following:

- Deciding on whether to recommend payment of dividend or reinvestment of earnings.
- Deciding on the amount of dividend to recommend.

- Deciding on the method of paying a dividend. Whether to pay cash dividends or use alternatives such as stock dividends and share repurchase.
- Deciding on whether to capitalize previously retained earnings through a bonus share issue.

**[Marks allocation: objective = 1; 2 decisions @ 1 mark each = 2 marks]  
(3 marks)**

**Relevant factors in the external environment**

Directors should consider the following factors in the external business environment when making financial decisions:

- Laws and regulations
- Economic factors
- Ecological issues
- Ethical issues

**[Marks allocation: 2 factors @ 0.5 marks each = 1 mark]**

**b)**

i) The degree of operating leverage (DOL)

The DOL of Firm A is 1.26, and that of Firm B is 1.76:

$$DOL = \frac{\% \text{ change in NOI}}{\% \text{ change in Revenue}}$$

	<b>Firm A</b>	<b>Firm B</b>
% change in Revenue	-40.0%	-40.0%
% change in NOI	-50.5%	-70.2%
% change in NI	-65.6%	-199.7%

$$DOL_A = \frac{-50.5\%}{-40.0\%} = 1.26$$

$$DOL_B = \frac{-70.2\%}{-40.0\%} = 1.76$$

Alternative formula:

The DOL may be computed as under using figures from the previous year (but not the new year)

$$DOL = \frac{\text{Contribution margin}}{NOI}$$

$$DOL_A = \frac{480 - 288}{152} = 1.26$$

$$DOL_B = \frac{372 - 74.4}{169.6} = 1.75$$

Implication:

The DOL assesses the volatility in operating profit to changes in revenue. It is high when the firm uses more fixed costs than variable costs in its operating cost structure. Firm B, which has a higher DOL, presents a higher business risk to Groupe Trojan than Firm A, which has the lower DOL. The implications for the capital structure decision is that Firm A, which has the lower DOL, could have higher debt in its capital structure than Firm B, which has a higher DOL.

**[Marks allocation: Computation of DOL = 2 marks each; advice on risk and implications for capital structure design = 1 mark] (5 marks)**

**ii) The degree of financial leverage (DFL)**

The DFL of Firm A is 1.3 and Firm B is 2.84:

$$DFL = \frac{\% \text{ change in NI}}{\% \text{ NOI}}$$

$$DFL_A = \frac{-65.6\%}{-50.5\%} = 1.30$$

$$DFL_B = \frac{-199.7\%}{-70.2\%} = 2.84$$

Alternative formula:

The DFL may be computed as under using figures from the previous year (but not the new year)

$$DFL = \frac{NOI}{NOI - Interest}$$

$$DFL_A = \frac{152}{152 - 35} = 1.30$$

$$DFL_B = \frac{169.6}{169.6 - 110} = 2.85$$

Implication:

The DFL assesses the volatility in net income to changes in operating profit. It indicates the level of financial risk. Firm B, which has a higher DFL, presents a higher business risk to Groupe Trojan than Firm A, which has the lower DFL. The implications for the capital structure decision is that Firm A, which has the lower DFL, could have higher debt in its capital structure than Firm B, which has a higher DFL.

**[Marks allocation: Computation of DFL = 2 marks each advice on risk and implications for capital structure design = 1 mark] (5 marks)**

**(Total: 20 marks)**

### EXAMINER'S COMMENT

This question consisted of a) and b) parts with two sub questions i) and ii) under b). The a) covered the objectives of fundamental decision areas in Finance in the areas of Investing, Financing and Dividend decisions and the external environmental factors to be taken into consideration in making those decisions. This part was essay and the performance of the candidates was above average and contributed to passing rate of candidates. This area covered 10 marks.

The b) aspect centred on computation of the degree of operating leverage and financial leverage for part i) and ii) respectively for Firms A and B and advise to the Directors the relative level of business and financial risk associated with the two subsidiaries and the implication of that on capital structure design. Each aspect carried 5 marks totalling 10 marks. The b) part of the question posed a challenge to the candidates on the computation and interpretation and advice. Even though the question appeared

clear, majority of the candidates struggled to compute, interpret and advice but few candidates were able to do all and scored the maximum marks.

On the average about 10% of the candidates got pass mark in this question. The a) part was best answered and b) poorly answered. Overall, it was a below average performance question and was the second worst answered question in the overall paper and contributed to the drop in the pass rate in the Subject.

## QUESTION TWO

i) Calculation of the value of Staygood using P/E ratios:

$$\text{Staygood's share price} = 12 \times 37p = \text{GH}\text{c}4.44 \quad (3 \text{ marks})$$

**Note:**

Any candidate who uses an adjusted P/E ratio in a 30% range should be given full credit.

We will assume that the market will expect Restwell to achieve a level of return on Staygood comparable to that which it makes on its own assets. Hence:

$$\text{Total market value} = 5m \times \text{GH}\text{c}4.44 = \text{GH}\text{c}22.2m \quad (3 \text{ marks})$$

ii) To use the Gordon growth model we must find  $g$  and  $k_e$

$$\text{Here } g \text{ is given by } \sqrt[5]{\frac{27}{15}} - 1 = 12.47 \text{ per cent}$$

$k_e$  for Staygood is 20% higher than Restwell, therefore:

$$k_e = 15\% \times 1.20 = 18\% \quad (2 \text{ marks})$$

$$\text{Therefore } P_0 = (27 \times (1.1247)) / (0.18 - 0.1247) = \text{GH}\text{c}5.49 \quad (3 \text{ marks})$$

$$\text{Total market value} = 5m \times \text{GH}\text{c}5.49 = \text{GH}\text{c}27.46m \quad (3 \text{ marks})$$

iii) Using future cash flows and discounting these to infinity using Restwell's WACC as a discount rate:

$$\text{Present value} = (\text{GH}\text{c}2.5m / (0.12 - 0.05)) + (5 / 1.12^2) = \text{GH}\text{c}39.7m \quad (6 \text{ marks})$$

**(Total: 20 marks)**

## EXAMINER'S COMMENT

Question two was on takeover in the hotel and leisure industry where Restwell Ltd was to take over a smaller Company called Staygood Ltd. The question was centred on estimating the value of Staygood under three different methods namely:

i) Price/Earning

- ii) Gordon growth model and
  - iii) Discounted cash flow valuation
- for 6 marks each for i) and iii) and 8 marks for ii) totalling 20 marks.

Candidates' performance was very poor in this question on all the three aspects. It was the price earning method that received moderate answers. Only few candidates were able to answer this question and scored good marks. Additionally, the question was too concentrated on only takeover valuation methods for the full 20 marks which impacted negatively on candidates who could not answer that question and influenced the overall decline in pass rate in this sitting.

The Overall performance in question was very poor and the worst answered with only 5% of the candidates getting pass in this question.

### QUESTION THREE

- a)
- i) **Instalment**

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

The present value of the payments,  $PVA_n = \text{Loan principal} = \text{GH}\text{c}500,000$

Annual interest,  $i = 22\%$

Frequency,  $m = 4$

Term (in years),  $t = 2$

Number of periods,  $n = \text{Term} \times \text{Frequency} = 2 \times 4 = 8$

$$500,000 = PMT \left[ \frac{1 - \frac{1}{\left(1 + \frac{0.22}{4}\right)^8}}{\frac{0.22}{4}} \right]$$

$$PMT = \frac{500,000}{\left[ \frac{1 - \frac{1}{\left(1 + \frac{0.22}{4}\right)^8}}{\frac{0.22}{4}} \right]} = \frac{500,000}{6.334565988} = 78,932.01$$

That is, the company will be required to pay GH¢78,932.01 at the end of each quarter to amortize the loan.

[Marks allocation: Interest factor = 1; Computation of instalment = 1; Final answer = 1] (3 marks)

ii) Amortization schedule

Period	Interest	Instalment	Principal repayment	Outstanding balance
0	-	-	-	500,000.00
1	27,500.00	78,932.01	51,432.01	448,567.99
2	24,671.24	78,932.01	54,260.77	394,307.23
3	21,686.90	78,932.01	57,245.11	337,062.12
4	18,538.42	78,932.01	60,393.59	276,668.53
5	15,216.77	78,932.01	63,715.24	212,953.29
6	11,712.43	78,932.01	67,219.57	145,733.72
7	8,015.35	78,932.01	70,916.65	74,817.07
8	4,114.94	78,932.01	74,817.07	-

[Marks allocation: Interest = 2 marks; Instalment = 1 mark; Principal repayment = 2 marks; Outstanding balance = 2 marks] (7 marks)

b) i)

Month (A)	GRR (%) (B)	Interest (Variable) (C) GRR+3% X GHS 1m	Fixed Rate (D)	Interest (Fixed) (E) 22% x 1m	Net Settlement (F) (E - C)
1	16	15,833	21%	17,500	(1,667)
2	18	17,500	21%	17,500	0
3	20	19,166	21%	17,500	1,666
4	19	18,333	21%	17,500	833
5	18	17,500	21%	17,500	0
6	17	16,667	21%	17,500	(833)

C= 3 marks

E= 2 marks

F= 3 marks

**(8 marks)**

ii) It is a hedge because the variable rate Asanka will receive will compensate the variable rate Asanka will pay to its Bankers it borrowed variable from and will be left with only the fixed interest payment. Settlement will be on net basis.

This takes off the uncertainty and volatility in monthly interest payment from Asanka.

**(2 marks)**

**(Total: 20 marks)**

### EXAMINER'S COMMENT

Question three consisted of a) and b) parts with sub questions i) and ii) under each. The a) i) covered computation of quarterly instalments for 3 marks and ii) on amortisation for 7 marks. The b) part was on interest rate hedge with i) on completion of various interest rates: variable, fixed and net settlement for 8 marks and ii) on a follow up on whether it was an interest rate hedge for 2 marks totalling 10 marks. The overall marks for the question was 20 marks.

The a) part received good answers and a reasonable number of the candidates understood the question and scored the maximum marks in both i) and ii). The b) part performance though average was below the a) part. The question required determination of the interest rates and computation of the various interest amounts based on the notional principal in the question for the variable and fixed interest

amounts and the net settlement in amount. Some candidates did very well in completing the table while others did that in percentages.

The overall performance was average. 17% of the candidates got pass in this question and the third best answered question in the paper.

#### QUESTION FOUR

##### a) Workings

Year	Written down value	Tax allowable depreciation	Tax benefit (30%)
	GH¢000	GH¢000	GH¢
1	2,000 (500) -----	500	150
2	1,500 (375) -----	375	113
3	1,125 (281) -----	281	84
4	844 (211) -----	211	63
c/fwd	633 -----		

##### NPV calculation

Year	1	2	3	4
	GH¢	GH¢	GH¢	GH¢
Average sales price	73.55	76.03	76.68	81.86
Average variable cost	51.50	53.05	49.17	50.65
Contribution per unit	22.05	23.98	27.51	31.21
Sales units	65,000	110,000	125,000	80,000

	<b>GHC000</b>	<b>GHC000</b>	<b>GHC000</b>	<b>GHC000</b>
Total contribution	1,433	2,528	3,439	2,497
Fixed costs	(1,248)	(1,298)	(1,350)	(1,404)
Taxable cash flow	185	1,230	2,089	1,093
Tax (30%)	(56)	(335)	(627)	(328)
	129	861	1,462	765
Tax benefits	150	113	84	63
Net cash flow	279	974	1,546	828
Discount factor, 10%	0.909	0.826	0.751	0.683
Present values	254	805	1,161	566

	<b>GHC000</b>
Total present values of net cash flows	2,786
Year 0 Capital outlay	(2,000)
<b>Project four-year NPV</b>	<b>786</b>

**Note:** There is no balancing allowance for the equipment for tax purposes, because the equipment will not be disposed of after four years. It would be reasonable to suggest that some terminal value should be included for the equipment at the end of Year 4, but there is insufficient information available on which to make such a valuation.

If the terminal value of the equipment is assumed to be its written down value at the end of Year 4, this could be included in the project cash flows and would increase the project NPV.

**[Average variable = 2 marks, Contribution per unit 0.5 mark, Sales units = 0.5 mark, Total contribution= 1-mark, fixed contribution = 2 marks, tax = 1 mark, tax benefits = 2 marks, present value = 1 mark and NPV = 1 mark] (11 marks)**

b) Payback and discounted payback

Year	Cash flow	Cumulative cash flow	Discounted cash flow	Cumulative discounted cash flow
	GH¢000	GH¢000	GH¢000	GH¢000
0	(2,000)	(2,000)	(2,000)	(2,000)
1	279	(1,721)	254	(1,746)
2	895	(826)	739	(1,007)
3	1,546	720	1,161	154
4	828	1,548	566	720

Non-discounted payback period = 2 years +  $[(826/1,546) \times 12]$  = 2 years 6 months  
**(2 marks)**

Discounted payback period = 2 years +  $[(1,007/1,161) \times 12]$  = 2 years 10 months  
**(2 marks)**

c) **Market volatility**

Market volatility in financial markets is a measure of the extent to which the price of a financial security (such as a share's market price), or a market as a whole, or an interest rate, or a currency, or a commodity changes over time.

High volatility means rapid and large changes in a price or rate over a short period of time. Low volatility means smaller and less frequent price changes.

Volatility refers to price movements in both directions, up and down. If prices move over time always in the same direction (either up or down, but not both) this does not mean high volatility. Volatility implies uncertainty about the way that prices will move next, and by how much.

High volatility creates high financial risk. Investors will want higher returns to invest in financial instruments where price volatility is high. **(3 marks)**

d) **Bull and bear markets**

In a bull market, prices on the whole move upwards continually over time. For example, in a bull stock market, share prices on the whole continue to rise over time.

In a bear market, prices on the whole move downwards continually over time. For example, in a bear stock market, share prices on the whole continue to fall over time.

**(2 points well explained for 2 marks)**

**(Total: 20 marks)**

## EXAMINER'S COMMENT

Question Four was on project evaluation, and theory aspect on market volatility, bull and bear markets and covered a) to d). a) was on Net Present Value Computation (NPV) b) on payback period on both non discounted and discounted cash flow basis whilst c) was market volatility in financial markets and d) and bull and bear markets. The a) aspect was well answered generally but some candidates struggled to compute the forecast variable and fixed cost over the 4-year period and how to handle the tax allowable depreciation issues which impacted negatively on their answers.

The b) part also generally received good answers with some candidates scoring the maximum marks.

The c) and d) which were theory questions also got good answers and pushed candidates into the pass zone in the question.

The overall performance was good and 23% of the candidates passed in this question. It was the second-best answered question in the paper and contributed to the overall pass rate.

## QUESTION 5

a) **Cash is held for various reasons. The three motives for holding are as follows:**

- Transitional motive for balance short term cash needs of inflows and outflows;
- Precautionary motive to meet contingent or unexpected cash needs as and when they occur;
- Speculative motive which is to take advantage of investment opportunities as and when they occur or come.

**(3 points explained for 3 marks)**

b)

i)

	<b>GH¢</b>
Sales	10,000,000
Cost of sales (55% x 10m)	<u>(5,500,000)</u>
Gross profit	4,500,000
Staff cost (10% x 10m)	(1,000,000)
Marketing & Distribution Cost (15% x 10m)	<u>(1,500,000)</u>
Net profit before tax before the policy	<u><b>2,000,000</b></u>

**(4 marks)**

ii)

	<b>GH¢</b>
Sales (150% x 10m)	15,000,000
Cost of sales (55% x 15m)	<u>(8,250,000)</u>
Gross profit	6,750,000
Staff cost (10% x 15m)	(1,500,000)
Marketing & Distribution Cost (15% x 15m)	(2,250,000)
Credit Admin Cost (20,000 x 12)	(240,000)

Bad Debts (4% x 5m (15-10m))	(200,000)
Interest or Financing Cost (1/12 X 5m x 25%)	<u>(104,167)</u>
Net profit before tax after the policy	<u><b>2,455,833</b></u>

**(6 marks)**

iii) Profit before tax after the policy	2,455,833
Less profit before tax before the policy	<u>2,000,000</u>
Change	<u><b>455,833</b></u>

New policy resulted in incremental profit of GH¢ 455,833 and should be implemented

**(3 marks)**

- c) A foreign currency swap is an agreement to exchange principal and interest payment in one currency for equivalent principal and interest payment in another currency. It is used usually to raise liquidity in one currency by utilizing the surplus liquidity in another currency without converting the currency to create exchange rate risk. It can also be done for trading purposes. Each party is borrowing and paying interest on the currency is short in liquidity by utilizing the liquidity surplus in has in the other currency.

**(2 marks)**

An interest rate swap is an agreement between two parties to exchange interest payments on an agreed Notional amount in the same currency for a specific maturity. It could be from floating to fix or from fix to floating. One party pays floating and receives or the vice versa The floating rate is referenced to a market benchmark like LIBOR and changes from time to time based on the changes in the benchmark.

**(2 marks)**

**(Total: 20 marks)**

### EXAMINER'S COMMENT

The question five was also a combination of theory and quantitative covering a) to c). The a) part was theory on three motives of holding cash for 3 marks. This part received the best answers with almost every candidate answering and getting good marks.

The b) aspect which carried 13 marks and covered i) to iii) was on the introduction of credit policy in the household consumable business and candidates were to measure the performance before the introduction of the credit policy and performance after the policy and advise management whether the new policy should be introduced or not. Most candidates got this question right and scored the maximum marks.

The c) aspect which was theory and on the differences between foreign currency and interest rate swaps performance was above average for 4 marks. The overall marks for the question was 20 marks.

Question 5 received the best answers and best performance in the paper. 66% of the candidates passed in this question and contributed to the overall pass rate of the candidates. The questions were precise and unambiguous and well understood by the candidates.