# NOVEMBER 2016 PROFESSIONAL EXAMINATIONS
# FINANCIAL MANAGEMENT (PAPER 2.4)
# CHIEF EXAMINER'S REPORT, QUESTIONS & MARKING SCHEME

**STANDARD OF PAPER**

The standard of the Financial Management paper for this November 2016 sitting was generally good from Examination standard perspective. It was also good from student's appreciation, understanding and answering of the questions perspective. It was a professionally balanced paper both in terms of syllabus coverage and marks allocation.

The questions asked were a good spread across the subject areas and also covered well both quantitative and non-quantitative aspects of the syllabus. This ensured that those who passed the paper were well read and prepared across the entire syllabus which was excellent

The questions appeared precise, unambiguous and measured up to the standard expected at level 2 of the examination. No typographical errors were noticed and no errors were found in the questions.

**PERFORMANCE OF CANDIDATES**

The performance of the students was a remarkable improvement over the recent past sittings and the best performance in recent memory. The average pass rate was about 33% far better than the less than 10% pass experiences. This can be partially attributed to improvement in the questions setting and moderations to ensure that they were balance, precise and comprehensible by the students commensurate with the standard expected at level two. It was further noticed that the improvement in performance and pass rate was spread across all centers, including the out of Accra and Cape coast centers, which in prior sittings recorded the worst performances.

**The possible reasons for the improved performance were as follows**:

- Standard paper at that level commensurate with the knowledge and expertise expected of students at that level
- Some improvement in preparations by students as answers provided showed some level of good preparation by the students
- Improvement in tuition services provided
- Improvement in knowledge by students on exam preparation and questions answering techniques
- The good performance was across all centers even though not in same magnitude.
- There was no evidence of copying in the exams.
- The level of preparations appeared better as reflected in the content of the answers. This showed improved preparation by the students to adequately answer the questions. Basic Finance terms and terminologies were responded to quite well and

most answers provided exhibited some level of basic fluency in Finance terminologies.

**NOTABLE STRENTHGS AND PERFORMANCE OF STUDENTS**

The 33% of students who did well exhibited the following strengths:

- Reading and understanding of the questions
- Well planned responses to the questions in line with the requirements of questions
- Very legible handwriting making reading and marking easier and better
- Well prepared and showed strengths in both quantitative and written questions
- Avoidance of mixing different answers to different questions and scattering of answers across difference pages mixed with answers of different questions.
- The strengths spread better by more students in this sitting than the prior sittings where it was limited to few students.
- Ability to think outside the box

**Observed weaknesses demonstrated by students**

- Some level of weak understanding of Finance principles by some students
- Poor exam preparation by some students who did not do well
- Failure by some students to comprehend the requirements of the questions
- Wrong numbering of answers to questions making it difficult for examiners
- Writing on areas not required by the questions
- Poor arrangement of answers to questions with answers to some questions scattered across different pages haphazardly
- Poor handwriting and faded pens making reading and marking difficult for examiners
- Remedies for observed weaknesses
- Improvement in preparation time by students before writing the paper

## FINANCIAL MANAGEMENT QUESTIONS

## QUESTION ONE

a) Explain the term ***Agency problem*** in relation to a Public Limited Liability Company? **(2 marks)**

b) As a Finance expert, explain **THREE** practical steps to manage agency problem in public limited liability companies. **(3 marks)**

c) Profit maximization is the core objective of shareholders in Public limited Liability Companies. Identify and explain **THREE** other non-financial objectives that can be pursued by a Public limited liability Company. **(3 marks)**

d) Shareholders are risk-takers but Directors are risk averse. Explain **THREE** approaches that corporate governance has identified for addressing conflict of interest between shareholders and Directors. Reference can be made to ***Companies Act 1963, (Act 179)*** **(6 marks)**

e) Explain **THREE** internal hedging methods that a company can use in order to minimise translation risk and transaction risk. **(6 marks)**

**(Total: 20 marks)**

## QUESTION TWO

a) Explain **THREE** causes each of the following situations;
   i) Overcapitalised **(3 marks)**
   ii) Overtrading **(3 marks)**

b) The liberalization of the downstream Oil and Gas sector in Ghana has created intense competition among the oil marketing companies. SAP Petroleum Ltd is considering relaxing its tight credit policy to boost sales in the light of the current market development. The change in policy will result in an increase in average collection period from 30 days (1 month) to 60 days (2 months). The review in credit policy is expected to increase sales in each year amounting to 25% of the current sales volume.

| | |
|---|---|
| Selling price per litre | GH¢ 30 |
| Variable cost per litre | GH¢ 27 |
| Current annual sales | GH¢ 6,000,000 |

The required rate of return on investment is 28%. The 25% increase in sales will result in additional stock level of GH¢250,000 and additional accounts payable of GH¢ 50,000.

**Required:**

Provide your expert advise on whether to extend or not to extend period to customers if:

i) All the customers take the longer credit of 2 months. **(5 marks)**

ii) Existing customers do not change their payment terms and only the new ones did? **(4 marks)**

c) i) Explain the concepts ***stock split*** and ***scrip issue*** and identify the main difference between the two. **(3 marks)**

ii) Explain why a company will embark on scrip issue? **(2 marks)**

**(Total: 20 marks)**

## QUESTION THREE

a) Sakyiama Poultry Farms is considering purchasing a new incubator that will improve its incubation efficiency to 90% as against the current 50%. The incubator, which is to be purchased immediately will cost GH¢120,000. The incubator has a useful life of 4 years, after which it would be sold for scrap at GH¢10,000. The current contribution of GH¢3 per day old chick will not change. The number of day old chicks sold at 12,000 units per annum will increase by 80%. Fixed cost will be GH¢20,000 per annum. Sakyiama Farms have after tax cost of capital of 12.5% and pays tax in the year in which profit is made at a rate of 15% per annum. The farm is also entitled to capital allowance at 25% on reducing balance.

**Required:**

i) Calculate the Net Present Value (NPV) and the viability of the investment. **(7 marks)**

ii) Calculate the Internal Rate of Returns (IRR). **(8 marks)**

b) Two blue chip companies – Abu Ltd and Ada Ltd are seeking to raise funds from venture capital to boost their production in order to satisfy demand for their solar powered refrigeration and air-conditioning systems, which they developed through a joint venture. They have consulted you for advise.

**Required:**

Explain **FIVE** conditions that a venture capitalist will consider in accessing an application for funding. **(5 marks)**

**(Total: 20 marks)**

## QUESTION FOUR

a) You have been appointed as the Finance Manager of Jaja Ltd and the expectation of the board is for you to provide education and working solution to their foreign exchange losses problem which your predecessor had no clue.

Your first task was to provide basic knowledge to the board on foreign exchange losses. How will you explain the following?

i) Foreign Exchange Risk **(2 marks)**
ii) Transaction Risk **(2 marks)**
iii) Translation Risk **(2 marks)**
iv) Economic Risk **(2 marks)**

b) Kaluu Ltd is a listed company on the Ghana Stock Exchange Market and showed the following performance. The following information was made available to you:

| | |
|---|---|
| Current market price per share (as at 31/12/15) | GH¢ 10 |
| Dividend per share 2015 | GH¢ 1 |
| Expected growth rate of dividend | 20% per annum |
| The average market returns | 27% |
| The risk free government rate | 24% |
| The beta factor of Kaluu Ltd | 1.4 |

**Required:**

i) What is the estimated cost of equity using the dividend growth model? **(3 marks)**
ii) What is the estimated cost of equity using the Capital Assets Pricing model? **(3 marks)**

c)

i) Distinguish between ***repurchase agreement (repos)*** and ***reverse repos***. **(3 marks)**

ii) A company enters into an agreement with a bank and it sells GH¢10million government bonds with an obligation to buy back the security in 60 days. If the rate is 8.2% what is the repurchase price of the bond? Assume 365 days in a year. **(3marks)**

**(Total: 20 marks)**

## QUESTION FIVE

a) The annual demand for Praise Limited's inventory is 10,500 units. The item costs GH¢400 a unit to purchase. The holding cost for one unit for one year is 12% of the unit cost and ordering costs are GH¢450 per order. The supplier offers a 2% discount for orders of 700 units or more and a discount of 3% for orders of 950 units or more.

**Required:**

Determine the ***cost minimising order size*** of the company. **(8 marks)**

b) Five years ago, Gasoto Ltd. issued 12 per cent irredeemable debentures at their par value of GH¢100. The current market price of these debentures is GH¢94. The company pays corporation tax at a rate of 30 per cent.

**Required:**
Calculate the company's current cost of debenture. **(3 marks)**

c) Zeb Limited offers 2 percent discount to its customers who pay within ten (10) days. The company normally collects its debt within thirty (30) days. Assume 365 days in a year.

**Required:**
Determine the cost of the discount to the company **(3 marks)**

d) Brothers Limited enters into a forward rate agreement (FRA) with Bank of Frica in which Brothers Limited will receive a fixed rate of 8% for nine (9) months on a loan of GH¢1million. Bank of Frica agrees to receive a nine (9) months LIBOR rate to be determined in nine (9) months' time on the loan principal.

**Required:**
Determine the results of the FRA and the effective loan rate if the spot rate for the LIBOR in nine (9) months is:

i) 5%
ii) 10% **(6 marks)**

**(Total: 20 marks)**

**Relevant Formulae**

Modified Internal Rate of Return $MIRR = \left(\frac{PV_R}{PV_I}\right)^{1/n} \times (1 + r_e) - 1$

Value at Risk $VAR = k\,\sigma\sqrt{N}$

The Fisher Equation: $1 + i = (1 + r)(1 + h)$

Capital Asset Pricing Model

$E(r_i) = r_f + \beta_i(E(r_m) - r_f)$

Ungeared (Asset) Beta

$$\beta_a = \left[\frac{V_e}{V_e + V_d(1 - t)} \times \beta_e\right] + \left[\frac{V_d\,(1 - t)}{V_e + V_d(1 - t)} \times \beta_d\right]$$

Gordon's Growth Model

$$V_0 = \frac{CF_0(1 + g)}{k - g}$$

Bond Valuation

$$V_0 = I\left(\frac{1 - \frac{1}{(1 + i)^n}}{i}\right) + \frac{RV}{(1 + i)^n}$$

Miller and Modigliani (MM) Proposition 2 with tax

$$k_e(g) = k_e(u) + (k_e(u) - k_d)\left(\frac{V_d(1 - t)}{V_e}\right)$$

Weighted Average Cost of Capital

$$WACC = \left[\frac{V_e}{V_e + V_d} \times k_e\right] + \left[\frac{V_d}{V_e + V_d} \times k_{dt}\right]$$

Purchasing Power Parity

$$F_1 = S_0{}^{d/f} \times \left(\frac{1 + h_d}{1 + h_f}\right)$$

Interest Rate Parity

$$F_1 = S_0{}^{d/f} \times \left(\frac{1 + i_d}{1 + i_f}\right)$$

International Fisher Effect

$$\frac{1 + i_d}{1 + i_f} = \frac{1 + h_d}{1 + h_f}$$

Black-Scholes Option Pricing Model

$$c = P_a N(d_1) - P_e\, e^{-rt} N(d_2)$$

$$d_1 = \frac{\ln\left(\frac{P_a}{P_e}\right) + (r + 0.5s^2)t}{s\sqrt{t}}$$

$$d_2 = d_1 - s\sqrt{t}$$

Put-Call Parity Relationship $p = c - P_a + P_e e^{-rt}$

**MARKING SCHEME**

**QUESTION ONE**

a) Agency problem occurs when managers or management take decisions that are not consistent with the objectives of shareholder value maximization. Contributors to this agency problem are: divergence of ownership and control, goals of managers differing from those of share holders because of personal interest and asymmetry of information between managers and shareholders. **(2 marks)**

b) The following can be used to manage or resolve agency problem
- Use of performance related reward scheme: in the form of pay and bonuses based on satisfactory performance of managers in delivering shareholder value
- Executive share option scheme: where managers or executives are allowed to buy the shares of the company at a fixed price within a particular period. The option will only have value if the market price is better than the price they will pay for exercising the option. This will encourage goal congruence between managers and shareholders.
- Threat of firing or dismissal: Managers or directors can be forced out by the shareholders if they are unhappy with their performance through shareholder meetings. This method can put pressure on managers or directors to perform.
- Key Market participants like institutional investors such as fund managers, pension houses, insurance companies who have larger shareholdings can exercise that to push managers to perform or be voted out.
- Monitoring and control of managers performance through the use of external and internal auditors, Board committees and review consultants.

**(Any 3 points for 3 marks)**

c) The following are other objectives:
- Staff motivation
- Top service to customers
- Growth
- Market leadership in research and development
- Social responsibility
- Environmental sustainability
- Diversification purposes etc.

**(Any 3 points for 3 marks)**

**d) Managing conflict of interest**

The main approaches are discussed below

- ***Alignment of management goals with the shareholder value maximisation***. This applies to the form of compensation/rewards provided for the Directors. It should be such that their actions will create a win-win situation for both the Directors and the shareholders. This process leads to goal congruence where the goals of the Directors that can influence them to pursue their personal interest are aligned with the goals of the shareholders.

- Various ***corporate governance controls*** also push the Directors to act in the interest of shareholders. Shareholders are responsible for the appointment of Directors, and the Directors in turn appoint their managers. Just as Directors can fire nonperforming managers, the shareholders can also replace the Directors if they consider them to be nonperforming. Again monitoring of management performance through periodic audit (internal and external) and other attestation arrangements will enable weaknesses in systems to be identified and steps taking to address those weaknesses.

- Provide a practical framework of reference for reviewing and modernising existing policy solutions in line with good practice. Promoting a culture in which conflicts of interest are properly identified and resolved or managed.

**(3 points for 6 marks)**

e)

- Translation risk is best managed by using matching. For example, in purchasing an asset in a foreign country, a company should raise the funds for the purchase in the foreign currency so both the asset and liability are in the same currency. There are a number of ways to hedge transaction risk internally. Matching, for example, could mean paying for imports in the same currency that a company invoices its exports in.
- Alternatively, a company could invoice customers in the domestic currency and find a supplier which does the same. The problem with this method, though, is that the company may lose foreign sales and also restrict the potential suppliers it can purchase from.
- Companies can also manage transaction risk by leading and lagging payments according to their expectations of exchange rate movements.

**(6 marks)**

**(Total: 20 marks)**

**EXAMINER'S COMMENTS**

This question was a typical essay question that tested the student's knowledge and understanding of agency problem in governance in the Finance world and how to manage that to achieve optimal results for stake holders. It also tested students on other non-financial objectives of the corporate bodies and how to hedge or manage currency risk in the globalised finance world. The question was well spread from (a) to (e).

Almost every student attempted this question and was one of the questions that received average to excellent answers from students and one of the best answered questions. Performance of the students was good.

**QUESTION TWO**

(a)

(i) **Over capitalization** refers to a situation where a company has more or excess capital at its disposal than what is required for its normal and optimal operation or utilization. When a company has issued more debt and equity than its assets are worth. An overcapitalized company might be paying more than it needs to in interest and dividends. Reducing debt, buying back shares and restructuring the company are possible solutions to this problem. **(3 marks)**

(ii) **Overtrading** is a situation where a company or firm has insufficient or inadequate cash or near cash resources at its disposal to conduct its operations due to rapid growth. The indicators of overtrading are:

- High utilization of trade credit with large creditor positions
- Large turnovers with no corresponding increase in cash or cash equivalents
- Funding or liquidity challenges etc **(3 marks)**

b)(i) **All customers takes the offer**

Extra Profit:

Contribution Sales Ratio = (30-27)/30 = 3/30 = 10%

Increase in sales revenue: 25% x 6,000,000 = 1,500,000

Increase in contribution = 10% x 1,500,000 = 150,000

Extra investments if all accounts or customers received 60 days ( 2months):

| | |
|---|---|
| Average accounts receivable after increase sales = 2/12 x 7,500,000 = | 1,250,000 |
| Less current accounts receivable (1/12 x 6,000,000) = | 500,000 |
| Increase in accounts receivable | 750,000 |
| Increase in inventories | 250,000 |
| | 1,000,000 |
| Less increase in accounts payables | 50,000 |
| | 950,000 |

Return on investment = 150,000/ 950,000 = 15.8% **(5 marks)** (ii ) **Extra investment if only new accounts receivables take the 2 months:**

| | |
|---|---|
| Increase in accounts receivables = 2/12 x 1,500,000 | = 250,000 |
| Increase in inventories | = 250,000 |
| | 500,000 |
| Less increase in accounts payables | 50,000 |
| | 450,000 |

Return on investment = 150,000/ 450,000 = 33.33% **(3 marks)**

The policy is worthwhile if the existing customers stick to the 1 month and new customers or accounts take the 2 months. The return on the latter is 33.33% which has crossed the required rate of return of 28%.

Decision or advice **(1 mark)**

c)

i) A **stock split** simply divides existing outstanding shares held by shareholders into multiple shares. i.e. if you own one share before a 2-for-1 split, you will own 2 shares after. A **scrip issue** works in almost the same way except that instead of having your shares split into 2, the company issues you one additional fully paid share free of charge so that you will also own 2 shares after the bonus issue. **(3 marks)**

**ii) Why a company will embark on scrip issue**

One of the major reasons why companies declare bonus issues is that a higher number of shares improves float and liquidity and thereby traded volumes of the stock. A lower price also makes the stock seem more affordable to small retail investors, who might otherwise give it a miss at high price levels. Another aspect of a bonus issue is that it reflects the confidence of the company in its ability to service a larger equity base. Thus, bonus issues are said to be a good signaling mechanism on the company's capacity to deliver future benefits to shareholders in terms of increased dividend. **(2 marks)**

**(Total: 20 marks)**

**EXAMINER'S COMMENTS**

This question consisted (a) to (c) portions. The (a) aspect was mainly essay on overcapitalisation and over trading testing student's knowledge on the causes of the two. Most students answered the question more from their symptoms than their causes but some students were able to understand and responded to the requirements of the question. They generally were able to explain the two but struggled on the causes. It was generally an average performance.

The (b) aspect was decision making question on working capital management. It focused on debtor's management and financial impact in terms of required rate of

return on investment from increasing debtor payment days from 1 month to 2 months with the associated increase in sales volumes.
Students generally had a poor understanding of the questions and struggled to compute the various variables required to answer the question satisfactorily. It was one of the poorly answered questions and most candidates obtained poor marks. The few who got it right scored good marks.
The (c) part of the question tested students on stock split and scrip issue and the core reason for a company embarking on scrip issue. This was straight forward question and was widely attempted by students.

Overall it was poor to average performance.

## QUESTION THREE

**a) Sakyiama farms**

(i) Investment appraisal

| **Years** | **0** | **1** | **2** | **3** | **4** | **Marks** |
|---|---|---|---|---|---|---|
| Cost | 120,000.00 | 90,000.00 | 67,500.00 | 50,625.00 | 37,968.75 | |
| Capital allowance | | 30,000.00 | 22,500.00 | 16,875.00 | 12,656.25 | 0.5mk |
| Tax gain | | 4,500.00 | 3,375.00 | 2,531.25 | 1,898.44 | 0.5mk |
| Additional gain (37,968.75-10,000)x15%) | | | | | 398.44 | 0.5 mk |
| Contribution $(12{,}000 \times \frac{0.9}{0.5} \times 3)$ | | 64,800.00 | 64,800.00 | 64,800.00 | 64,800.00 | 0.5 mk |
| Fixed Cost | | (20,000.00) | (20,000.00) | (20,000.00) | (20,000.00) | 0.5mk |
| Cash flow before tax | | 44,800.00 | 44,800.00 | 44,800.00 | 44,800.00 | 0.5mk |
| Tax (15%) | | (6,720.00) | (6,720.00) | (6,720.00) | (6,720.00) | 0.5mk |
| Tax gain | | 4,500.00 | 3,375.00 | 2,531.25 | 1,898.44 | 0.5mk |
| Additional gain | | | | | 398.44 | 0.5mk |
| Cost of incubator | (120,000.00) | | | | | 0.5mk |

| | | | | | | |
|---|---|---|---|---|---|---|
| Scrap value | | | | | 10,000.00 | 0.5mk |
| Net cash flow | (120,000.00) | 42,580.00 | 41,455.00 | 40,611.25 | 50,376.88 | 0.5mk |
| Discount factor (12.5%) | 1.000 | 0.889 | 0.790 | 0.702 | 0.624 | 0.5mk |
| Present value | (120,000.00) | 37,848.89 | 32,754.57 | 28,522.58 | 31,450.04 | 0.5mk |
| Net Present value | | | | | 10,576.07 | 0.5mk |

Total for this is 7 marks

(ii) IRR

| | | | | | | |
|---|---|---|---|---|---|---|
| Net cash flow | (120,000.00) | 42,580.00 | 41,455.00 | 40,611.25 | 50,376.88 | 1 mks |
| Discount factor (17%) | 1.000 | 0.855 | 0.731 | 0.624 | 0.534 | 1 mark |
| Present value | (120,000.00) | 36,393.16 | 30,283.44 | 25,356.47 | 26,883.62 | 1 mark |
| Net Present value | | | | | (1,083.31) | 1 mks |

$a = 12.5$

$NPVa = 10{,}576.07$

$b = 17$

$NPVb = (1{,}083.31)$

$$IRR = a + \left(\frac{NPVa}{(NPVa - NPVb)}\right) \times (b - a)$$

$$IRR = 12.5 + \left(\frac{10{,}576.07}{(10576.07 + 1{,}083.31)}\right) \times 17 - 12.5 = 15.67\%$$ 4 marks

Note: Candidates who use any rate above 12.5% for "b" and follow the correct process should get full marks even if the IRR is not equal to 15.67% Total 8 marks

**(b) Venture capitalist**

Venture capitalist will evaluate proposal for funding based on a number of criteria including the following

- ***Nature of the company's products***
  The products of the company should enable it generate adequate sales and profits that are sustainable for it to be attractive to venture capital investment.
- ***Expertise in production***
  Technical ability should be demonstrated through efficient production and value driven skills and competencies.
- ***Expertise in management***
  Management should demonstrate commitment, skills, and experience in promoting the objectives of the organization.
- ***The market and competition***
  The company's proposal should demonstrate that it has a competitive strategy to maintain and expand its market share
- ***Future profits***
  The prospects of the company in generating future profits are realistically expressed in its business plan and proposal.
- ***Board membership***
  The company should have a board of directors who will take decisions and consider the interest of the stakeholders
- ***Risk borne by existing shareholders***
  Significant part of the company's funding is from its owners who also bear the major part of the company's risk

**(Any 5 points for 5 marks)**
**(Total: 20 marks)**

**EXAMINER'S COMMENTS**

This question was a blend of comprehensive investment appraisal and decision making on the (a) i and ii part and essay question for the (b) on consideration by venture capitalist in financing a project or business.

A lot of pre working was required on the (a) part and involved a lot of calculations for both NPV and decision and Internal Rate of return calculation. This was one of the questions students spent a lot of time on. Only few brilliant students got it right here as most students generally attempted the question based on their own understandings to get some few marks. It was one of the worst answered questions in the paper.

The (b) aspect also did not get a coherent response from the students but the students thought generally outside the box on what was expected and answered appropriately. It received varied answers from the students and almost every student attempted the questions and provided their responses based on their understanding. It was fairly well answered

**QUESTION FOUR**

**a)**

(i) **Foreign exchange risk** is the risk of changes in the foreign exchange rate or the value of a currency. The level of change or movement cannot be determined with certainty making any counterparty with exposure in that be exposed to the market volatility or uncertainty. **(2 marks)**

(ii)**Transaction exposure** refers to the gains or losses made on foreign exchange transactions due to the changes in the exchange rate between the transaction date and the payment or settlement date if the exposure or transaction is unhedged. **(2 marks)**

(iii)**Translation risk** refers to the movement in values either gains or losses of the balance sheet due to the consolidation of the assets and liabilities into a reporting currency from various currencies. **(2 marks)**

(iv)**Economic exposure** refers to the long term changes in the value of a foreign firm due to the unexpected changes in the exchange rate movements. **(2 marks)**

b) **Estimated cost of equity using Gordon Growth Model**

(i) Ke = do(1+g)/po + g

Where do = 1

Po=10

g= 20%

= 1(1+0.2)/10 + 0.2

= 0.32 = 32% **(3 marks)**

**Using CAPM**

(ii ) Ke = 0.24+ 1.4(0.27-0.24)

= 0.282 = 28.2%

**(2 marks)**

**(Total: 20 marks)**

**EXAMINER'S COMMENTS**

Question 4 was also a blend of essay and calculation question. The (a) aspect covered (i) to (iv) mainly on types of exchange rate risk and was of the well answered areas by most students and performance was generally satisfactory.

The (b) and (c) aspects which tested students' knowledge on computation of cost of equity from both dividend growth model approach and Capital assets pricing model perspective were one of the best answered areas in the exam. The requirements of the questions were well understood and the students answered precisely to that scoring the maximum marks in most cases.

The (c) aspect which covered repos and reverse repos and calculations were averagely answered. On overall basis question (4) was one of well attempted questions by the students.

**QUESTION FIVE**

(a) The EOQ ignoring discounts

$$EOQ = \sqrt{\frac{2C_0D}{H}} = \sqrt{\frac{2 \text{ x } 10500 \text{x } 450}{400 * 0.12}}$$ **=443.71 units or 444 units**

| | GHC |
|---|---|
| Purchases (no discount) 10500 x GHC 200 | 4,200,000 |
| Holding cost (444/2) units x 12% x 400 | 10656 |
| Ordering costs (10500/444)*450 | 10702.27 |
| Total annual costs | 4,221,358 |

(b) With a discount of 2% and an order quantity of 700 units costs are as follows:

| | |
|---|---|
| Purchases 10500*400*0.98 | 4,116,000 |
| Holding costs (700/2 *0.12*400*0.98) | 16464 |
| Ordering costs (10500/700*450) | 6750 |
| Total annual costs | 4,139,214 |

(c) With a discount of 3% and an order quantity of 750 unit cost are as follows:

| | |
|---|---|
| Purchases 10000*400*0.97 | 4,074,000 |
| Holding costs (950/2 *400*0.12*0.97) | 22,116.00 |
| Ordering costs (10500/950 *450) | 4973.68 |
| | 4,101,089.7 |

The cheapest option is to order 950 units at a time

**(8 marks)**

**b) Company's current cost of debenture**

Kd = 12/94 = 12.8% Kd (after tax) = 12.8 × (1 – 0.3) = **8.96%** **(3 marks)**

**c) Cost of discount to the company**

$$\left(\frac{100}{100-2}\right)^{\left(\frac{365}{30-10}\right)} - 1$$

$$\left(\frac{100}{98}\right)^{\left(\frac{365}{20}\right)} - 1 = \mathbf{44.59\%}$$

**(3 marks)**

**d)**

(i) 5%

| | | |
|---|---|---|
| Brothers pays | $\frac{(8\% - 5\%)}{12} \times 9 \times 1{,}000{,}000$ | 22,500 |

Effective loan rate

| | | |
|---|---|---|
| FRA payment | | 22,500 |
| Loan interest | $0.05 \times \left(\frac{9}{12}\right) \times 1{,}000{,}000$ | 37,500 |
| **Total** | | **60,000** |
| Effective rate is | $\left(\frac{60{,}000}{1{,}000{,}000}\right) \times \left(\frac{12}{9}\right)$ | 8% |

(ii) Settlement 10%

| | | |
|---|---|---|
| Bank of Frica pays | $\frac{(10\% - 8\%)}{12} \times 9 \times 1{,}000{,}000$ | 15,000 |

Effective loan rate

| | | |
|---|---|---|
| FRA Receipt | | (15,000) |
| Loan interest | $0.1 \times \left(\frac{9}{12}\right) \times 1{,}000{,}000$ | 75,000 |
| **Total** | | **60,000** |
| Effective rate is | $\left(\frac{60{,}000}{1{,}000{,}000}\right) \times \left(\frac{12}{9}\right)$ | 8% |

**EXAMINER'S COMMENTS**
The (a) aspect required comprehensive calculations and decision making on various discount levels to achieve cost minimising order levels.
The (b) aspect tested students on their ability to calculate the cost of debenture of a company while the (c) examined them on the determination of cost discount to company for offering discounts to debtors who paid within 10 days.
Goods answers were generally received from the students.

The questions were generally standard commensurate with the level and students answers to questions showed improvement over the last few sittings.