

**CHARTERED INSTITUTE OF STOCKBROKERS  
SEPTEMBER 2008 EXAMINATION  
PAPER 3.1: SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT  
SOLUTIONS**

**SECTION A**

1(i).

- liquidity problems in the economy
- the stock was considered overpriced despite the good result
- better alternative investment outlets especially in the money market
- Important information about the company leaked to the market which was not considered favourable. **(Any 3 = ½ mark per point).**

(ii)

- Cash dividend
- Scrip
- Company products i.e. Guinness may give out Malta Guinness, Guinness stout etc as dividend. **(½ mark per point)**

(iii)(a)

- Fear of dilution of income/dividend
- Fear of oversupply of shares which may force down the price if there is no effective high demand.
- Fear that the company maybe in possession of excess cash which cannot be quickly turned into profitable venture. **(¼ mark for a point)**

(iii)(b).

- Increase advertisement in the possible use of the excess cash in profitable venture.
- Possible intervention by the company in the purchase of surplus shares that is not taken by the market through the use of an Asset and Management companies.
- Ensuring timely release of quarterly financial report especially if it's good. **(¼ mark for a point).**

(iv)

Buy company DEF Plc (½ mark)  
 With a low PE ratio of 3 it means that my investment can be totally recouped within 3 years an evidence that the company is underpriced compared to its dividend and NPAT. (½ mark) **(Total = 1 mark).**

(v) To spread Risk and Return. (2 marks)

(vi) N5, 327.26 (working ½ mark, ½ mark for correct answer)

(vii)

- Default or credit risk
- Tax
- Liquidity (½ mark for each point)

(viii) A – Investment trust company (1 mark for correct answer)

(ix)

- a. Dividend payout ratio
- b. The required Rate of Returns on the stock
- c. The Expected growth Rate of Dividend for the stock (1 ½ mark)

(x) Growth companies have management ability and Investments opportunities that yields more than the firm's required rate of return, while growth stocks are equities that generate greater return on investment than equities with similar risks. (2 marks)

(xi) Capital preservation is risk of loss minimization that ensures that the returns on investment are not less than the rate of inflation. (1 mark)

(xii) Life insurance annuity is a level or serial payment to an annuitant for the duration of his lifetime in consideration of a premium. (1 mark)

(xiii) Holding Period Return (HPR) =  $\frac{\text{N} 900 + 10\% (\text{N} 1,000) - \text{N} 995}{\text{N} 995}$  (1 mark)

Holding Period Yield (HPY) =  $(\text{HPR}) - 1$   
 =  $(\frac{\text{N} 900 + 10\% (\text{N} 1,000) - \text{N} 995}{\text{N} 995}) - 1$  (1 mark)

(xiv) Bond yield spread is the difference in promised yields between bond issues or segment of the bond market at any point in time. (1 mark)

(xv) Allocating money for investments between a riskless asset and a single risky fund. **(2 marks)**

(xvi) Operating profit =  $0.254 * 2020 = N 513.08m.$  **(½ mark)**

Net profit =  $513.08 - 90 - 56 = N 367.08m.$  **(½ mark)**

EPS =  $367.08 (1 - 0.3) = N256.96m.$  **(½ mark)**

(xvii) Business Risk: This is the uncertainty of income flows of the firm, caused by the basic nature of business of the firm.

Financial Risk: This is the uncertainty introduced by the secondary market for an investment. Uncertainty about price or speed opportunity cost which bought or sold.

Exchange Rate Risk: This is the uncertainty of returns to an investor who acquires securities denominated on a currency different from his or her own.

Country Risk :( Political Risk) this is the uncertainty of returns caused by possible instabilities in the government structure.

Liquidity Risk: Uncertainty of timing and amount of securities at the time of sale in secondary market. **(2 ½ mark)**

(xviii) Management fee + Administrative/NAV of the funds. **(1 mark)**

(xix)

- At Client's request
- If other forms of investment i.e. Money market instruments, property market or insurance/pension products give high risk and low return. **(½ mark per point)**

(xx) Offer for sale is when an existing shareholder offers for sale part of his shares while offer for subscription is when the company issues for sale to the public. **(1 mark each for any 2 points)**

- 2(a) The term structure of interest rates refers to the relationship between yields and maturities for fixed income securities of the same or similar risk. Expectations regarding future interest rate levels give rise to differing supply and demand pressures in the various maturity sectors of the bond market. These pressures are reflected in differences in the yield movements of bonds of different maturity. The term “structure of interest rates”, or “yield curve”, will normally be upward sloping in a period of relatively stable expectations. The theoretical basis for the upward sloping curve is the fact that investors generally demand a premium, the longer the maturity of the issue, to cover the risk through time, and also to compensate for the greater price volatility of longer maturity bonds. **(5 marks).**
- (b) According to the expectations theory of yield curve determination, if borrowers prefer to sell short maturity issues at the time lenders prefer to invest in longs which happens when interest rates are expected to fall, longer maturity issues will tend to yield less than shorter maturity issues. The yield curve will be downward sloping. This generally occurs in periods when restrictive monetary policy by the Government, in an attempt to control inflation and inflation expectations causes very high short-term interest rates. In these circumstances, demand for short-term maturities is severely dampened. **(5 marks).**
- (c) You should select portfolio A because it has a longer duration (5.7 versus 4.9 years) and greater convexity (125.18 versus 40.30), thereby offering greater price appreciation. Portfolio A is also non-callable, therefore there is no danger of the bonds being called in by the issuer when interest rates decline (as you expect they will). **(7.5 marks).**

3.	PERIOD	NAV	PREMIUM/DISCOUNT	
	MARKET PRICE			
	0	10.00	0.0	10.00
	1	11.25	-5.0	6.25
	2	9.85	+2.3	12.15
	3	10.50	-3.2	7.30
	4	12.30	-7.0	5.30

(a)  $10.00 = 5.30$  (PV 4 years)  
 $1.8868 = 1/(1 + x)^4$

Average return per year  
 $= 5.31\%$  (using calculator)

$(1 + x)^4 = 5300$   
 $1 + x = (5300).25$   
 $1 + x = 8532$   
 $X = -0.1468$

Average return per year  
 $= -14.68\%$  (using calculator)

(b)  $10.00 = 12.30$  (PV 4 years)  
 $0.8130 = 1/(1 + x)^4$   
 $(1 + x) = 1.230$   
 $1 + x = (1.230).25$   
 $1 + x = 1.0531$   
 $X = 0.0531$

Average return per year  
 $= 5.31\%$  (using calculator)

(c)  $6.25 = 12.15$  (PV 1 year)  
 $0.5144 = 1/(1 + x)$   
 $(1 + x) = 1.9440$   
 $X = 0.9440$

Average return per year  
 $= 94.40\%$  (using calculator)

(d)  $11.25 = 9.85$  (PV 1 year)  
 $1.142 = 1/(1 + x)$   
 $(1 + x) = 0.8755$   
 $X = -0.1244$

Average return per year  
 $= -12.44\%$  (using calculator)

4(i)

Return	Probability	E(R)
-0.6	0.15	-0.09
-0.3	0.1	-0.03
-0.1	0.05	-0.005
0.2	0.4	0.08
0.4	0.2	0.08
0.8	0.1	0.08
0.4		0.115
0.066667		0.019167

$$r_A = 0.067$$

$$\begin{aligned}(r_A - r_A)^2 &= (0.15)(-0.60 - 0.115)^2 + (0.10)(-0.30 - 0.115)^2 + (0.05)(-0.10 - 0.115)^2 \\ &\quad + (0.40)(0.20 - 0.115)^2 + (0.20)(0.40 - 0.115)^2 + (0.10)(0.80 - 0.115)^2 \\ &= 0.768 + 0.1722 + 0.00231 + 0.00288 + 0.1624 + 0.04692 \\ &= 0.16225 \\ \delta_A &= \sqrt{0.16225} = 0.403\end{aligned}$$

(ii)(a) Based on E(R) alone, Chuks Plc stock is preferable because of the higher return available.

(b)  $CV = \text{Risk}/E(R)$   
 $CV_{\text{comp B}} = 0.128/0.0525 = 2.44$   
 $CV_{\text{chucks}} = 0.403/0.115 = 3.50$

Based on co-efficient of variation, Chuks Plc Company's stock would be preferable to company B, because it has a smaller value of CV since a smaller CV implies a relatively smaller risk for a relatively higher return.

**(2 ½ marks).**

5(a) i.

- Cash flow is unknown in advance.
- Life of the investment is forever. No maturity
- No way to know the rate of return which the market require

**(3 marks).**

ii.  $P_0 = D_1/(r-g) = D_0*(1+g)/(r-g)$

$$= N2*1.08/ (.16 - .08)$$
$$= \underline{N27}$$

**(2 marks).**

$$D_5 = D_0*(1+g)^5$$
$$= N2 * (1.08)^5$$
$$= N2.9387. \quad \text{Price in 5 years=}$$
$$P_5 = D_5 * (1 + g)/(r - g)$$

$$N2.9387 * 1.08/.08$$

$$= 3.1738/.08$$
$$= N39.67$$

**(2 marks).**

- iii. Efficient Market Hypothesis explain that for well organised capital market, market reacts to information by price adjustment guidely and correctly. What is currently happening in NSE iss that investors are keeping away from the market due to some negative comments from the regulators making demand and short of supply always.

**(3 marks).**

5b(i).

Net Assets Basis

$$\frac{\text{Current Net Asset}}{\text{Nos of Issued shares}} = \frac{77,617,652}{46,297,248} = 160 \text{ kobo} \quad \mathbf{(2 \text{ marks}).}$$

(ii) Maintainable Earnings Basis

NPAT 2007	N12,667,078
2006	N15,050,576
2005	<u>N14,327,820</u>
	42,045,474
Average NPAT	3/N14,015,158
No of Shares	46,297,248

$$\text{Capitalized value for one year} = 14,015,158/135/46,297,248$$
$$= 220 \text{ kobo.} \quad \mathbf{(2 \text{ marks}).}$$

(iii) Current Earning Bases

NPAT (2007) = N12,667,078

Industry average Earning per share = 22 kobo

No of share = 46,287,248

=  $12,667,078 / 22k / 46,287,248$

= 120 kobo

**(2 marks).**

Net Asset Basis 50%

Maintainable Earnings Basis 25%

Current Earning Basis 25%

=  $80k + 55k + 30 = 165$  kobo

Share Price valuation = 165 kobo

**(1 ½ marks).**

**6(a)** APT vs. the CAPM

Arbitrage pricing theory does not include any of the following three assumptions incorporated in the capital asset pricing model (CAPM): noted as parts I, ii and iii

i. Investor Utility function or quadratic utility: Capital market theory assumes investors want to maximize utility in terms of risk and return preferences; maximum return per unit of risk or minimum risk per unit of return. From the Markowitz model forward, relevant risk has been measured by variance of returns of standard deviation.

APT makes no assumptions regarding investor preferences; the multifactor model commonly used in APT does not include any exponents higher than 1.

ii. Normally distributed returns. The probability distribution of expected returns of an investment and the associated dispersion or variability of those returns forms the basis of Markowitz portfolio theory and the CAPM. Normal or symmetrically distributed security returns enable estimation of a variance term. In the CAPM, all investors have identical estimates for the probability distributions of future returns (homogeneous expectations).

APT does not describe or specify or require an assumption about security return distributions of any kind.

iii. The market portfolio. The CAPM assumes that pricing, valuation, risk, and return are solely functions of an asset's relationship to a market portfolio of all risky assets. In practice, the market portfolio is difficult to specify, so a mistakenly specified market portfolio might result. Roll called this mis-specification "benchmark error".

APT does not consider or include an assumption of a market portfolio. APT is predicated on a common set of several (macroeconomic) factors.

**6(b)** Conceptual difference between APT and the CAPM

Conceptually, in APT, return is a function of a set of common factors. In the CAPM, return is a function of a market portfolio of all risky assets. Thus, one difference between APT and the CAPM can be described by the fact that APT is a multifactor model that attempts to capture several non-market influences that cause securities or assets to change in price whereas the CAPM is a single-index model that assumes securities or assets change in price because of a common co-movement with one market portfolio of all risky assets.

- (c) Another conceptual difference between APT and the CAPM is that, in application of the theory, the market portfolio (or “factor”) required by the CAPM is specified. In APT, the common factors are not identified, but the common factors in APT are often described or accepted as including inflation or unanticipated deflation; default risk, government corporate security spread, risk premiums or interest rate spreads, changes in the term structure of interest rates, changes in real final sales, GDP growth or a similar proxy for long-run profits on an economy-wide basis; major political upheavals; and exchange rates.

A third difference between APT and the CAPM lies in the incorporation of sensitivity coefficients to measure or describe the risk of assets or securities. APT incorporates a number of sensitivity coefficients. These coefficients determine how each independent variable or macroeconomic factor affects each asset. Different assets are affected to factor is beta, an asset’s sensitivity to the changes in the market portfolio (often called an asset’s “systematic risk”).

- 7(a)** Under funded plans is a situation where the present value of pension liabilities exceeds the asset value, while Overfunded plans is a situation where the Present value of the pension liabilities is less than the Asset value. **(3 marks).**

- (b) Pension risk for a defined plan is carried by the company and it involves an actuarially underfunded plan to meet pension plan, while the pension risk of defined pension plan is borne by the employees and basically is the investment risk of the fund being able to meet the retirement needs. **(3 marks).**

- (c) Group life insurance is a single life insurance contract covering not less than 50 employees or an organization with or without medical examination, written to the employer which preclude individual selection other than the benefits to the employer and premium paid by the employer, and where the premium is jointly paid, all employees must be eligible and not less than 75% of such employees shall be so insured. Wholesale life assurance is like group life assurance when the participation is lower than the qualification or when separate life insurance contracts of the same form are issued to members of an association on a mass marketing basis. **(6½ marks).**
- (d) Program withdrawals according to pension reform acts is an annuity payment over an agreed period of years as a redemption plan from pension fund administrators and it essentially an investment annuity, while contingent annuity is essentially a redemption plan that is dependent on survivorship of the annuitant. **(5 marks).**

**(Total = 17 ½ marks)**

**CHARTERED INSTITUTE OF STOCKBROKERS  
 SEPTEMBER 2008 EXAMINATION  
 PAPER 3.2 : FINANCIAL FUTURES AND OPTIONS  
 SOLUTIONS**

**SECTION A**

1.

- |          |           |
|----------|-----------|
| (i) D    | (xi) C    |
| (ii) B   | (xii) D   |
| (iii) A  | (xiii) C  |
| (iv) C   | (xiv) D   |
| (v) C    | (xv) B    |
| (vi) A   | (xvi) C   |
| (vii) C  | (xvii) B  |
| (viii) A | (xviii) B |
| (ix) C   | (xix) B   |
| (x) D    | (xx) A    |

2

- a) The portfolio is worth ₦300,000 times the value of the index (1,440,000,000 ÷ ₦4,800). When the value of the portfolio falls by 5% (to ₦1368 million), the value of index also falls by 5% to ₦4,500. The manager therefore requires European put options on 300,000 times the index with exercise price ₦4,560. We therefore need to price a put option on a stock index.

I. We first determine the appropriate call option using:

$$C = Se^{-qT} N(d_1) - Ee^{-rT} N(d_2)$$

Where,

$$d_1 = \frac{\ln \left( \frac{S}{E} \right) + (r - q + \sigma^2/2)(T)}{\sigma \sqrt{T}}$$

$$d_2 = d_1 - \sigma \sqrt{T}$$

S = spot price of the index = 4800

E = exercise price = 4560

r = risk-free rate = 0.075 p.a.

q = continuous dividend yield = 0.025 p.a.

$\sigma$  = annual volatility

We are given quarterly volatility which must be converted to annual volatility as follows:

$$(0.15)4 = 0.30 \text{ p.a.}$$

$$T = 3/12 = 0.25$$

$$d_1 = \ln \frac{\left( \frac{4800}{4560} \right) + 4800 - \frac{(0.025 + \frac{0.30^2}{2}) (0.25)}{2}}{(0.30) (0.25)}$$

$$= 0.5003$$

$$d_2 = 0.5003 - ((0.30) (0.25))$$

$$= 0.3503$$

$$N(d_1) = 0.6915 + 0.03 (0.6950 - 0.6915)$$

$$= 0.6916$$

$$N(d_2) = 0.6368 + 0.03 (0.6406 - 0.6368)$$

$$= 0.6369$$

The value of the call option is

$$C = (4800e^{-0.025 \times 0.25} \times 0.6916) - (4560e^{-0.025 \times 0.25} \times 0.6369)$$

$$= 3299 - 2850 = 449$$

From put-call parity:

$$Se^{-qT} + P = C + Ee^{-rT}$$

$$\text{or: } P = C + Ee^{-rT} - Se^{-qT}$$

$$P = 449 + 4560e^{-0.075 \times 0.25} - 4800e^{-0.025 \times 0.25} = 154.20$$

The total cost of the insurance is therefore  $300,000 \times 154.20$

$$= \text{N}46,260,000$$

b) From put-call parity

$$P = C - Se^{-qT} + Ee^{-rT}$$

This shows that a put option can be created by selling (or shorting)  $e^{-qT}$  of the values of the portfolio, buying a call option and investing the remainder at the risk-free rate of interest. Applying this to the situation under consideration, the portfolio manager should:

- 1) Sell  $1440e^{-0.025 \times 0.25} = \text{N}1431.03$  million of stock
- 2) Buy call options on 300,000 times the index with exercise price 4560 and maturity in six months
- 3) Invest the remaining cash at the risk-free interest rate of 60% per annum.

The strategy gives the same result as buying put options directly.

c) The delta of one put option is  $e^{-qT} [N(d_1) - 1]$

$$= e^{0.025 \times 0.25} (0.6916 - 1) = -0.3065$$

This indicates that 30.65% of the portfolio (i.e.  $\text{N}441.36$  million) should initially be sold and invested in risk-free securities

d) The delta of a six-month index futures contract is

$$e^{(r-q)T} = e^{(0.075 - 0.025)(0.5)} = 1.0253$$

The spot short position required is

$$\frac{441,360,000}{4,800} = 91,950$$

times the index. Hence a short position in  $\frac{91950}{1.0253 \times 1000}$

= 90 futures contracts is required

**3.**

- a) i) Target interest income  
 $6\% \times \$7.2\text{million} \times 4/12 = \$144,000.00$
- ii) No of contracts needed  

$$= \frac{\$7.2 \text{ million} \times 4 \text{ months}}{\$1\text{m} \times 3 \text{ months}}$$
  
 = 9.6 contracts; round to 10
- iii) Since the company is lending, it should buy on 1 November, 10 March 3-month Eurodollar futures contracts at 92.40 (the contract with next date expiry after the date when the deposit will be made)

**b) Result of Hedge**

Cash Market

Interest rate (R)	4.5%	8%
Interest Received:		
\$7.2m x R x 4/12	\$108,000	\$192,000
Target interest income	<u>144,000</u>	<u>144,000</u>
Gain/ (loss) on target = k =	<u>(36,000)</u>	<u>48,000</u>

Future Market

Interest Rate	4.5%	8%
Sell at	93.60	90.60
Buy at	<u>92.40</u>	<u>92.40</u>
Gain/ (Loss) per contracts in ticks.....	120	(180)
No of contracts	10	10
Total ticks	1,200	1,800
Value per tick	\$25*	\$25*

Total gain/(loss) =p= (* \$1m x 0.0001 x 3/12 = \$25)	\$30,000	(\$45,000)
Net position = (k + p)	(\$6,000)	(\$3,000)
Actual income earned	\$	\$
Proceeds on deposit	108,000	192,000
Profits/(Loss) on futures	<u>30,000</u>	<u>(45,000)</u>
Net Income	<u>138,000</u>	<u>147,000</u>

**Hedge Efficiency**

$$= \frac{\text{Prof}}{\text{Loss}} \times 100 = \frac{30,000}{36,000} \times 100 = 83.3\%$$

$$= \frac{48,000}{45,000} \times 100 = 106.67\%$$

**Effective Return:**

i)  $\frac{\$138,000}{\$7,200,000} \times \frac{12 \text{ mths}}{4 \text{ mths}} \times 100 = 5.75\%$

$\frac{\$147,000}{7,200,000} \times \frac{12 \text{ mths}}{4 \text{ mths}} \times 100 = 6.13\%$

4.

In the following solution, we define:

$S_0$  = current stock price

$S_T$  = the stock price at expiration

$C$  = the call premium

$p$  = the put premium

$V_T$  = Value at expiration

$n$  = profit

BEP = breakeven point

a) Long Call

I.  $V_T = - \text{Max} (0, S_T - E)$

$$\begin{aligned} n &= V_T + C \\ &= -7 + 3 = -4 \end{aligned}$$

II.  $\text{BEP} = E + C$

$$= 50 + 3 = 53$$

b) i) A long stock plus a short call is referred to as covered call

ii)  $n = S_T - S_0 - \text{Max} (0, S_T - E) + C$   
 $= 46 - 40 - \text{Max} (0, 46 - 45) + 1.25$   
 $= 6 - 1 + 1.25 = 6.25$

Thus, the expected profit is ~~N~~6.25

iii)  $\text{BEP} = S_0 - C = 40 - 1.25 = 38.75$

c) i) A long put and a long stock is called protective put

ii)  $n = S_T - S_0 + \text{Max} (0, E - S_T) - P$   
 $= 42 - 35 + \text{max} (0, 30 - 42) - 0.45$   
 $= 7 + 0 - 0.45 = 6.55$

Thus, the expected profit is ~~N~~6.55

iii) Maximum possible loss is given by  
 $S_0 + P - E$

$$= 35 + 0.45 - 30 = 5.45$$

5.

(a) An option is said to be in the money when the stock price is greater than the strike price. it is also out of the money when the stock price is lesser than the strike price. **(3 marks)**

(b) Standard Option Contract = 100

Therefore, 5 call option contract = 500

The market value of the stock

$$= N65 \times 500 = N32,500.$$

**(1 mark)**

20% of N32,500	6,500	
+ Option Premium	<u>1,600</u>	
	8,100	
Less amount out of money	<u>2,500</u>	
Margin Required	<u>5,600</u>	<b>(3 marks).</b>

**Minimum Margin**

10% of N32,500	3,250	
+ Call Premium	<u>1,600</u>	
Minimum margin	<u>4,850</u>	<b>(2 marks)</b>

(c)

Settle Date	Settle Prices	Contract Value	Marking to Market	Margin Account Balance	
21/01/08	N210.55	105,275	--	12,000	<b>(1 mark)</b>
01/02/08	N211.65	105,825	+ 550	12,550	<b>(1 mark)</b>
08/02/08	N220.75	110,375	+4550	17,100	<b>(1 mark)</b>
15/02/08	N208.85	104,425	- 5950	11,150	<b>(1 mark)</b>
22/02/08	N202.15	101,075	-3350	7,800	<b>(1 mark)</b>
29/02/08	N206.85	103,425	+2350	10,150	<b>(1 mark)</b>
08/03/08	N206.35	103,175	-250	9,900	<b>(1 mark)</b>

¾ mark

¾ mark

**(8 ½ marks)**

**6.**

(a) The price of a six-month maturity contract can be derived from the spot-future parity model

$$F_0 = S_0 (1 + rf)^t$$

Where  $F_0$  = Future price,  $S_0$  = Spot price of underlying asset;  $rf$  = risk free rate;  $t$  = time remaining to expiration

If  $t = 6$  months;  $rf = 8\%/2 = 4\%$  (half year rate) and

$$S_0 = \$70$$

Therefore:

$$\begin{aligned} F_0 &= S_0 (1 + 0.04)^6 \\ &= 70 (1.040)^6 \\ &= 70(1.265319018) \\ &= \$88.57 \end{aligned}$$

(b) The 6-month future contract should sell at the spot-future price of \$88.57 (ignoring storage cost) instead of \$95.57 otherwise there will be opportunity for arbitrage profit.

Since the spot-future price is \$88.57 which is less than the quoted 6-month futures price \$92.57, an investor has the opportunity to make arbitrage profit.

The investor can make arbitrage/riskless profit by taking a long position in crude oil (buy the crude oil) and a short position in the futures contract (sell the futures contract and borrow enough to pay for the purchase of the crude oil).

He makes an arbitrage profit of  $\$95.57 - \$88.57 = \$7.0$  per barrel

The time it will take for the quoted futures contract price of \$92.57 to equate the standard 6-month future on the oil.

$$\begin{aligned}
 S_0 (1 + rf)^t &= 92.57 \\
 70 (1.04)^6 &= 92.57 \\
 (1.04)^t &= 92.57/70 \\
 (1.04)^t &= 1.322428571 \\
 t \text{ Log } 1.04 &= \text{Log } 1.32242857 \\
 t &= \text{Log } 1.32242857 / \text{Log } 1.04 \\
 &= 0.1213722232 / 0.017033393 \\
 &= \mathbf{7.12 \text{ months}}
 \end{aligned}$$

- 7(a) The future contract puts both parties (buyers and seller) under obligation to honour their contract. However, parties to a future contract are not in a bondage because each one can take an equal, and opposite position to offset their initial positions.

Hence, in the above case the farmer can buy one July future contract on maize at the then prevailing price. His original short position is now offset by the new long (bought) position with no outstanding obligation to deliver. This strategy is called offsetting. The offsetting strategy is a common feature of the futures market as very few contracts run through to delivery.

- (b) (i) A call holder – hopes that the price asset of the underlying asset will rise substantially, before the option expires. He therefore hopes to profit if the price eventually rises above the strike price.
- (ii) A put holder – hopes that the price of the underlying asset will decline substantially, before the option expires. He hopes to profit by selling the asset at a price (Strike) greater than the amount by which the asset is likely to be traded on by the expiration date.
- (c) (i) The Forward Price  
 Forward Price ( F ) =  $S_0 e^{rt}$

$S_0 = \text{Spot Price} = \text{N}50.0$ ;  $e = 2.7183$ ,  $r = 0.75$ ,  $t = 0.5$  (half - year)

$$\begin{aligned} f &= 50(2.7183)^{(0.75)(0.5)} \\ &= 50(2.7183)^{0.0375} \\ &= \text{N}51.9106 \end{aligned}$$

(ii) The value of forward contract is

$$f = S - Ke^{-rt}$$

Where  $S = \text{N}50.0$  and  $K = \text{N}54$  (delivery price)

$$\begin{aligned} f &= 50 - 54(2.7183)^{-0.0375} \\ &= 50 - 54(0.96319) \\ &= 50 - 52.0123 \\ &= -\text{N}2.0123 \end{aligned}$$

The value of a non-dividend paying forward contract is therefore the spot price less than the present value of the strike price.

**CHARTERED INSTITUTE OF STOCKBROKERS**  
**SEPTEMBER 2008 EXAMINATION**  
**PAPER 3.3: MARKETING OF FINANCIAL SERVICES**

**SOLUTIONS**

**SECTION A**

**1**

- I. A
- II. B
- III. C
- IV. A
- V. E
- VI. E
- VII. E
- VIII. C
- IX. B
- X. A
- XI. A
- XII. E
- XIII. C
- XIV. E
- XV. D
- XVI. C
- XVII. B
- XVIII. A
- XIX. A
- XX. B
- XXI. C
- XXII. A
- XXIII. E
- XXIV. C
- XXV. D
- XXVI. A
- XXVII. A
- XXVIII. B

XXIX. C

XXX. D

**2**

I. People:-

- Is the core focus of the firm
- The firm is marketing oriented
- Needs of people and their satisfaction is the only thing that the firm stands for, that keep the firm in business
- The firm's profit is a function of people's patronage
- Providing splendid experience, comfort and satisfaction. **(5 marks).**

II. (a) Exterior store design tells:-

- What type of store
- Who, it is for
- The unique identity to give Akoi competitive advantage over others

(b) Sight:-

- Catches attention
- Influences mood with colour
- Evokes purchasing or acquisition decision

(c) Lighting:-

- Draws attention
- Ensures safety
- Provides healthy environment for staff and customers
- Aesthetic lighting accentuates the features of services/products and highlight creative display

(d) Colour

- Creates psychological, emotional, and symbolic association

(e) Display and presentation:-

- Aid in the process of selling
- Show service
- Sets stone of the store

- Animates people
- Influence purchases

(f) Sound (Solemn):-

- Influences shopping experience while silent (dead sound) is upsetting and unsettled
- Loud sound is disturbing and unpleasant

(g) Smell/Odours:-

- Do evoke emotional reactions and arouses memories of other occasions and affect mood

7 marks

III. Akoi is a challenger

**(2 marks).**

Other strategies Akoi can use include:-

- Lower commission
- Service innovation
- Service-cost reduction
- Intensive advertising
- Competitive sales promotion

**(4 marks).**

IV. No, he has not done enough

**(1 mark).**

(a) He should institute in-service training through seminars, conferences and workshops

(b) He should encourage staff through awards for excellent performance

(c) He should give them leave and end of year bonuses. **(6 marks)**

**(Total = 25 marks)**

### COMPONENTS OF A QUESTIONNAIRE

- I. Identification Data: This is the first part of the questionnaire that identifies the respondents. It requests for the name, address, telephone number, time and date of interviewing the respondent.
- II. Request for Cooperation: Opening statement requesting the respondents help regarding the interview
  1. it identifies the organisation conducting the interview
  2. it explains the purpose of the study
  3. it tells the time or date to return the completed form. It guarantees confidentiality of the information given.
- III. The Instructional Part: This part states how to use the questionnaire. That is either to tick, right, mark an X or circle correct answers. This is used to create commonality in the ways questions are answered and the ease the processes of analysis and interpretation.
- IV. Information sought: This is the body of the questionnaire. It is the questionnaire design that is the questions asked should be.
- V. The classification data: This concerns the characteristics of the respondents. It categorized the respondent by sex, age marital status, occupation, income, membership of professions/club/union.

(9 marks).

### Guidelines for the Questions

1. Focus effective link between the decision-making and the research process. Deciding – need for information, research objectives, data, sources, data collection forms, sample design, data, administration, processing and analysis and result presentation.
2. *Deciding on response format*: Use open-ended or closed-ended questions.  
*Deciding on the Wordings*: Using clear, well-worded and simple words. Avoiding leading, bias, implicit, estimates and double-edge questions.  
*Deciding on Question Sequence*: Starting with simple question, followed by less difficult and difficult estimates  
*Deciding on Classification of Respondents*: Using Age, Sex, Occupation, Income e.t.c.

6 marks

#### 4 Sales Quotas

Sales quotas are specified quantity, volume for value in currency or naira that sales representatives are mandated to achieve at any given time. Quotas are passed from management at the head office to individual branches and the level of quotas depends upon the level of viability and potential of the areas where the branches are located. Every branch head share the branch quotas among the subordinates

#### Periodic Sales Meetings

At regular interval, sales in head branches meet with top management at the head office. Subsequent meetings are held at the branches.

These meetings are break away from the routine services, providing social occasion and chance for workers to meet, discuss, evaluate and compare the achieved against the quotas or standards set to amend where and when there are deviations. These are communication and motivational tools.

#### Formal Evaluation of Performance

1. Current-to-Past Sales Comparison: This is a system where staff members' present performance and past achievements are compared to evaluate continuous increase in performance
2. Customers Satisfaction Evaluation: Customers are interviewed to determine their level of satisfaction as a function of the performance of the bank staff
3. Qualitative Evaluation of Sales Representatives: Staff can be assessed based on their knowledge of the company, its products, customers, competitors, territory and responsibilities and working environment.
4. Efficiency and effective control
5. Number of new Accounts/Clients. **(15 marks)**

#### 5. Environmental analysis for International marketing

##### 1. Social and cultural forces:

- (a) Family
- (b) Customs and behaviour
- (c) Education
- (d) Language difference **(5 marks).**

##### 2. Economic environment

- (a) Infrastructure
- (b) Level of economic development
- (c) Competition **(5 marks).**

3. Political and Legal forces

4 Government Policies

- (a) Trade barriers: Tariff, import quota, local-content law, local operating Laws, standards and certification, boycott, etc
- (b) Trade agreements: WTO, etc

5. Globalisation

6. Geographical Environment

7. Technological Environment **(5 marks).**

**(Total = 15 marks).**

**6.** Criteria for New products:

- (a) To improve profit
- (b) When faced with stiff competition
- (c) Declining stage of existing product
- (d) Technological change
- (e) Entering a new market
- (f) Change in general income level
- (g) To maintain/improve corporate image
- (h) Maintain leadership position
- (i) Need for diversification
- (j) Deliberate or planned obsolescence.

**(2 marks x 7 points + 1 mark = 15 marks).**

**7.** Impact of the internet on markets:

- 1 Control of interactions
- 2 More and better information
- 3 Customized products
- 4 Fewer fixed prices
- 5 Restructured channels
- 6 Buyer communication

**(3 marks x any 5 points = 15 marks).**

**CHARTERED INSTITUTE OF STOCKBROKERS**  
**SEPTEMBER 2008 EXAMINATION**  
**PAPER 3.4: REGULATIONS & PRACTICE OF STOCKBROKING**

**SOLUTIONS**

**SECTION A**

**1**

- (i) a
- (ii) c
- (iii) e
- (iv) d
- (v) d
- (vi) d
- (vii) d
- (viii) e
- (ix) c
- (x) e
- (xi) d
- (xii) e
- (xiii) c
- (xiv) c
- (xv) d
- (xvi) e
- (xvii) d
- (xviii) a
- (xix) e
- (xx) d
- (xxi) e
- (xxii) a

(xxiii) b

(xxiv) b

(xxv) b

(xxvi) Certificate of Exemption is an authorization or approval granted by the Nigeria Stock Exchange to a company or an issuer to publish an abridged prospectus instead of a full or detailed one.

(xxvii) Declaration of Compliance is a commitment or undertaking signed by a company or an issuer with the Nigeria Stock Exchange to the effect that in relation to the

just concluded public offering, share certificates have been sent to successful subscribers or that their CSCS Stock Accounts have been credited accordingly and also that Return monies have been sent to unsuccessful subscribers.

- (xxviii) UVRCDS stands for Unsecured Variable Rate Convertible Debenture Stock
- (xxix) During the offer period as stated in the rights circular approved by SEC.
- (xxx) Green shoe option means an option of allocating shares in excess of the shares included in the public issue and operating a post-listing price stabilizing mechanism.

## 2(a)

- (i) Not obeying knowing your Customer rule before account is opened and CDF processed.  
Allowing John Harry to carry the transfer form out of the office for signature, when an officer of the brokerage firm ought to have witness the signature.  
Allowing John Harry to carry the certificates personally to Registrars for verification.  
Issuing cheque in the name of a company over which no search has been conducted to ascertain its genuineness or true ownership.
- (ii)
  - Passport photograph of the owner of the shares.
  - Utility Bills
  - Photocopy of Drivers Licence/International Passport.
  - Personal appearance of the owner to confirm his ownership and the owner.
  - Owner signing in the presence of the Stockbroker.
- (iii) Before bringing the law enforcement into the issue, the owner ought to  
Contact the Firm, Nigeria Stock Exchange, Securities & Exchange Commission and Chartered Institute of Stockbrokers. The last resort should be the law enforcement agents.
- (iv) Requirements for opening Corporate Account
  - Duly completed Account Opening Form
  - Two (2) clear recent passport-size photographs of each signatory to the account with their names and signature written on the reverse side.

- Identification of signatories: International Passport, Driver's Licence or National ID Card. (Originals to be sighted)
- Certificate of Incorporation (Original to be sighted)
- Memorandum and Articles of Association (certified true copy) by the Registrar of Companies and a Director of the company.
- Form CO2 CAC certified true copy (Original to be sighted)
- Form CO7 CAC certified true copy.

(b) i. Must agree with the MD.

Reasons:

- No valid application without a letter of invitation to the prospective investor.
- The offers are by nature private-targeted at specific individuals and organizations.
- NewlyWeds Nigeria Limited is a limited liability company and not a Plc.

ii. Difference between private placement and hybrid/public offer for subscriptions:

- Size of Subscribers

PP	-	50
HPO	-	No Limit

- Investors

PP	-	Selected Investor
HPO	-	Open to all

- Type of issuers

PP	-	Limited companies well as Plcs
HPO	-	Public companies only

- Number of shares

PP	-	30% of existing issued & paid up capital
HPO	-	No such limit. Depends on Authorized capital

- Period of offer

PP	-	10 working days
HPO	-	28 working days

iii. Legal Implications:

- C. A. C. Registered Entity Limited Liability Company.
- Cannot be offered to more than 50 subscribers.
- Period of offer not more than 10 working days except extension is granted
- Not for the general public
  - No advert

- Directed at a specific individuals or organizations
  - Special Resolution (defined by CAMA) authorizing placement – state number of shares and offer price.
- 3 In all cases of default, the Council of the Nigerian Stock Exchange shall meet and appoint a Committee which shall have the following powers:
  - (a) To engage technical and professional assistance;
  - (b) To call from the defaulter its original Books of Account relating to, and a statement of sums owing to, and by him in connection with Stockbroking transactions;
  - (c) To call meetings of Members who are creditors or defaulters;
  - (d) To summon the defaulter to appear before such meetings of the Committee and to afford the defaulter full right to defend himself before the Committee throughout the investigation;
  - (e) To make detailed examinations of all relevant accounts;
  - (f) To report to the Council any entry, transaction or matter which have been or appear to be irregular;
  - (g) To recommend to Council the appointment of an Interim Management to manage and deal with the stockbroking business of the defaulter and the assets subject to the approval of the commission
  - (h) Any other matter incidental to the investigation.

#### 4(a) CONFLICT/DISPUTE RESOLUTION

- (i) Conflicts/Disputes relating to professional conduct between members shall be settled internally before resorting to external settlement. Thus, the settling of such disputes on the pages of Newspapers, the Law courts or through other avenues without exhausting existing internal organs available in the Institute constitutes misconduct and will attract disciplinary action against the member who initiated such action.
- (ii) Members' grievances should be channeled to the Institute through the Registrar in writing.
- (iii) Upon receipt of such complaint, the Registrar shall refer same to the appropriate committee as appointed by the Council, within 2 weeks.
- (iv) The Conflict/Dispute Resolution Committee shall thereafter inform the parties concerned of the case before it, fix a date for hearing and resolve the issues.
- (v) The recommendation of the committee shall be submitted to the Council and copies kept in the Institute's archives.

#### 4(b) i. What is e-Allotment?

E-allotment is the electronic (automatic) capture of allotted shares into investors' accounts in the CSCS as against the traditional, age-long practice of manual issuance of share certificates.

- ii. Why e-Allotment?  
The genesis for the current interest in e-allotment is similar to that of e-dividend. Specifically, issues involved include:
- Wrong name and/or address supplied by investor on the subscription form;
  - Address captured wrongly by the data entry operator;
  - Diametric upsurge in the number of subscribers;
  - Postal services delay;
  - Establishment of a level playing field – all investors have access to the stock exchange at the same time;
  - Cost reduction;
  - No more unclaimed share certificates;
  - No more share certificate verification for all CSCS account holders.
- iii. E-allotment differs from e-IPO in the sense that it only captures the allotment electronically while e-IPO takes account of every step involved in the public offer from the filling of application forms to the final stage of allotment and crediting investors' accounts.
- iv. The process is as follows:
1. Registrar prepares an allotment schedule which is recorded in a computer media
  2. Issuing Houses forward the allotment proposal to SEC for clearance
  3. Schedule of allotment is forwarded to CSCS by the Registrar
  4. Reports are generated by CSCS which forwards same to the Registrar
  5. Allotted shares are deemed to have been verified and are made available to investors within 48 hours of receipt from the Registrar
- v. Benefits of e-Allotment  
The following benefits characterize e-allotment:
- Investors' CSCS accounts are automatically and electronically credited with the number of shares allotted.
  - Investors/Shareholders can access their shares immediately after SEC clearance for disposal or update.
  - The risk of loss of shares certificates in transit is eliminated.
  - Transactions on shares become more transparent and dynamic.
  - The clumsiness of gathering share certificates over years and stock reconciliation becomes a thing of the past.
  - Paper work is drastically reduced.
  - Cost of printing share certificates and other handling charges are eliminated.
  - Unnecessary processing bottlenecks currently experienced in share certificate verification will be eliminated.
  - It standardizes allotment thereby placing the Nigerian capital market on the same pedestal with international markets.
  - Attainment of efficiency in market transactions thereby attracting both local and foreign investors to the market.

- Elimination of loss of share certificates through hazards e.g. Fire, or misplacements, e.t.c.
- It engenders fairness in regulation because enforcement of market regulations becomes automated.
- It provides for a reliable pricing regime.

#### Other benefits to Stakeholders

##### Investors:

- Eliminates cases of unclaimed share certificates.
- Better share portfolio management by book-entry instead of physical share certificates.
- Provides same time access to the stock market – level playing field.
- Saves time of share certificates verification.
- Saves time of postal services.
- No more signature irregularities

##### Quoted Companies:

- Cost saving arising from paperless share certification practice.
- E-allotment comes with reduction and eventual elimination of multiplicity of investors account. This translates into reduction in management cost of Registrar firms.

##### Market and Operators:

- It engenders fairness in regulation because enforcement of market regulations become automated
- It provides for a reliable pricing regime.

## 5. Causes of the Bearish Run

### i. Narrate events leading to the bearish run.

- Prices were made without any regard to fundamentals of the companies.
- Margin lending became rampant. This excess liquidity over-heated the market.
- Regulatory lapses
- Institutional investors and banks became active participants in the market.
- CBN policy of announcing common year end for Banks led to increase in interest rate in the money market as banks were looking for deposits at all cost. This made a lot of funds to go into money market instruments.

Effect of the above factors is that prices nose-dived and the bears ruled the market. This caused many investors to lose substantially.

ii. Possible corrective actions

- Brokers should be more professional in advising their clients.
- Regulators should be pro-active.
- Need for market makers.
- Law to enable companies to do share buy back should be enacted.

**6**

(a) Benefits of CSCS to investors:

1. Owing to short clearing/settlement cycle of T+3 offered by it, investors can derive income from speculation in stocks
2. CSCS eliminates the incidence of lost or stolen share certificates
3. The investors can easily place a call or hook to the Internet to ascertain his holdings and monitor his investments.
4. CSCS offers protection to investors through CSCS Special Account
5. Acts as a custodian for securities and other valuables for investors.
6. Facilitates inter-member transfer of stocks for investors from the Resident Houses to the Target Houses.
7. Through the stock position slip, the investor can have a consolidated position of all his investments in quoted securities.
8. The CSCS facilitates the use of securities as collateral for loan facilities by investors.
9. The investor can easily obtain a Transaction History of any stock he has invested in.
10. The CSCS gives a more accurate picture or status of investors' holdings which may be overstated or understated by registrars

(b) Functions of the Central Securities Clearing System Ltd are:

- Serves as the depository of the capital market
- Performs custodian functions
- Undertakes delivery functions
- Settlement functions by settling trades done on the Nigeria Stock exchange
- Undertakes inter-member stock movement
- Facilitates the use of shares as collateral for loan facilities
- Enhance market transparency
- Serves as a sub-registry for quoted companies
- Enhances market liquidity
- Elimination of risks of lost or stolen share certificates

