SOLUTION: FINANCIAL MANAGEMENT STRATEGY NOV 2008

QUESTION 1

(a) The first step is to work out the net cash flows

Contribution = (3.00 – 1.75) x 50,000 = GH¢62,500

Fixed costs = 40,000 – (100,000 – 5,000)/5 = GH¢21,000

Working capital = 15,000 + 20,000 – 10,000 = GH¢25,000

Year	Capital GH¢	Contribution GH¢	Fixed Costs GH¢	Advert GH¢	Working Capital GH¢	Net cash flow GH¢
0	(100,000)	1	1	1	2	(100,000)
1		62,500	(21,000)	(10,000)	25,000	6,500
2		62,500	(21,000)	(15,000)		26,500
3		62,500	(21,000)			41,500
4		62,500	(21,000)			41,500
5	5,000	62,500	(21,000)			71,500

The net cash flows can now be discounted to find the net present value.

Year	Net cash flow GH¢	10% Dff	Present rate GH¢
0	(100,000)	1,000	(100,000)
1	6,500	0.909	5,909
2	26,500	0.826	21,890
3	41,500	0.751	31,167
4	41,500	0.683	28,345
5	71,500	0.621	4,402
			31,713

The net present value of the project is GH¢31,713

(b) Once arranged long-term funds provide more breathing space since funds raised do not have to be paid until much later beyond periodic servicing.

(c) - Loss of flexibility it uses long term
- Long-term funds generally cost more

Option (a) 500,000 at 20% per annum for 3 years

FV = $500,000(1.2)^3 = 864,000$

Option (b) 500,000 at 12%, 22% and 24% per annum

FV = 500,000(1.12) (1.22) (1.24) = 847,170

(ii) Effective annual rate under option b

Let re = effective annual rate over the three years then

$(1 + r_e)^3 (1.12) (1.22) (1.24) = 1.6943$

:. $r_e = \sqrt[3]{1.6943} - 1 = 19.21\%$ per annum

(iii) To equate the two options

$500,000(1.2)3 = 500(1.12) (1.22) (1 + {}^{r}3)$

where ${}^{r}3$ is the rate at which to borrow in year 3

$$(1 + r_3) = \frac{(1.2)^3}{(1.12)(1.22)}$$

$$\therefore\ r_3 = \frac{(1.2)^3}{(1.12)(1.22)} - 1 = 26.5\% \text{ per annum}$$

QUESTION 2

(a)The principal advantages would be:

a. Portfolio effect

The centralization of cash management will allow for surplus funds from operating units to be invested in an optimal way for the going as a whole. Each unit's funds may be relatively insignificant but when combined with all other units produces a management fund.

b. Aggregation of cash balance

Some units may have temporary negative balances. Arrangements can be made with the bank that only the net aggregate balance is relevant for computing commissions and charges.

c. Expertise

Cash management will be carried out by specialized staff experienced in dealing with all aspects of the function.

d. Budgeting

It will assist in the cash budgeting process

e. Cash balances

The average size of the group's net cash balance is bound to be reduced, thus reducing the net opportunity cost of funds tied up as idle balances throughout the company.

f. Improved banking services

Kaki-Pee

Computation of Budgeted Working Capital Cycle.

	Days
Raw materials holding period	125
Working capital holding period	50
Finished good holding period	34
Debtors collection period	65
	274
Creditors payment period	(110)
Budgeted working capital cycle	164 days

The period between the payment of cash to creditors and the receipt of cash from debtors is budgeted at 164 days.

Workings

1. Raw material holding period = $\frac{\text{Stock of R.M}}{\text{Purchases}} \times 365$

$= \frac{240{,}000}{1{,}920} \times 365$

$= 125 \text{ days}$

2. W.I.P = $\frac{\text{WIP}}{\text{Cost of sales}} \times 365$

$= \frac{180{,}000}{3{,}600} \times 365$

$= 50 \text{ days}$

3. Finished goods holding period = $\frac{\text{FG}}{\text{Cost of sales}} \times 365$

$= \frac{122{,}400}{3{,}600} \times 365$

$= 34 \text{ days}$

4. Debtors collection period = $\frac{\text{Total Debtors}}{\text{Sales}} \times 365$

$= \frac{300{,}300}{4{,}620} \times 365$

$= 65 \text{days}$

5. Creditor payment period = Total creditors x 365
Purchases

= 211,200 x 365
1,920 x 365

110 days

NB It should be noted that for WIP, cost of sales has been used since cost of production was not given

(b) 3 existing shares @ 3.5 = 10.5
2 new shares @ 3.00 = 6.0
5 16.5

ex-price = 16.5
5
= 3.3

Value of a right =
Current price – ex-price
3.5 – 3.3
= .2

(c) (i) The value of a right
= (Rights-on Price – Subscription Price)
(n + 1)
where n is the number of rights
3.5 – 3.3 = 3.5 – 3.0
= 0.2 [(3/2) + 1]
Value per right = GH¢0.2

¢0.2

(ii) Ex-Rights Price

Current market value of 3 shares = 3.5 x 3 = 105
Subscription Price for 2 new shares = 30 x 2 = 60
Total Investment in 5 shares = 165
:. Ex-rights price/share = 165/5
= GH¢3.3

(iii) Renounceable Rights

Shareholders who are not interested in the new shares or are unable to exercise their rights forgo/forfeit such rights. The new issues may be sold to other or new subscribers.

(iv) Current holding = 9,000

New holding = $\frac{\text{Current holding}}{\text{No. of Rights}}$

$= \frac{9000}{(3/2)}$

$= \frac{9{,}000 \times 2}{3}$

= 6,000

:. Amount to be paid = 6,000 x subscription price

= 6,000 x ¢3.0

= GH¢18,000

Joe will suffer a dilution of his interest in terms of

a) diminished voting right
b) reduction in market price from GH¢3.5 to GH¢3.3 ex-right price
c) reduction in earnings per share and for that matter dividends.

QUESTION 3

(a)

STEP 1: Calculate the value for each company (without merger) and determine the combined value without synergy.

$NPV_a = \frac{EBIT_a(1 - t) \times (1 + g)}{(k_a - g)}$

NPV of M $= \frac{100{,}800(1 - 0.25) \times (1 + 0.04)}{(0.10 - 0.04)}$

$= \frac{(75{,}000 \times 1.04}{0.06}$

$= \frac{78{,}000}{0.06}$

= 1,300,000

NPV of T $= \frac{80{,}000\ (1 - 0.25) \times (1 + 0.06)}{(0.12 - 0.06)}$

$= \frac{60{,}000 \times (1.06)}{0.06}$

$= \frac{63{,}600}{0.06}$

= 1,060,000

Combined Value of M and T without synergy = 1,300,000 + 1,060,000

= 2,360,000

STEP 2: Calculate the value of the new company incorporating effects of synergy

Total revenues (400,000 + 200,000)	=	600,000
Less operating of costs (65% x 600,000)	=	390,000
Profit before tax		210,000

Calculate new cost of capital for the combined firm

$$= 10\% \left(\frac{1{,}300{,}000}{2{,}360{,}000}\right) + 12\% \left(\frac{1{,}060{,}000}{2{,}360{,}000}\right)$$

$$= 0.055 + 0.054$$

$$= 10.9\%$$

Value of combined firm with synergy

$$= \frac{\text{Profit before Tax } (1 - t) \times (1 + g)}{(k_n - g_n)}$$

$$= \frac{210{,}000\ (1 - 0.25) \times (1 + 0.06)}{(0.109 - 0.06)}$$

$$= \frac{157{,}500 \times (1.06)}{0.049}$$

$$= \frac{166950}{0.049}$$

$$= 3{,}407{,}142.86$$

STEP 3: Value of Synergy

= (Value of combined firm with synergy) - (value of firms without synergy)

= 3,407,142.86 – 2,360,000

= 1,047,142.86

This value is positive therefore the merger will be beneficial.

(b) Synergy is defined as the increase in value from combing two firms into one entity. It is the difference in value between the combined firm and the sum of individual firm values.

Operating Synergy

This is the increase in value that accrues to a combined firm either from economies of scale or increased sales/profits.

eg.
i. lower cost arising from economies of scales
ii. higher growth
iii. complete control over a production or distribution process to gain competitive advantage, dominate industry etc.

Financial Synergy

This is the synergy/increase in value that arises from a purely financial effect.

eg.
i. lower taxes
ii. higher debt capacity
iii. better use of idle cash

(a) (i) Tax position – Systems Ltd may need to consider its tax position. When the company is unlikely to pay tax in the future then it will not obtain major benefit of debt finance.

(ii) Bankruptcy and agency costs are likely to be higher for firms with high business risk. When the company's business risk is high then it is not advisable to compound it by taking on high finance risk.

(iii) Asset quality – Bankruptcy costs and agency costs are likely to be higher for companies with a high proportion of intangible assets. Creditors know that it is easier to get their money back on land and buildings than it is on intangibles. In practice companies with large investments to property tend to be more highly geared than for example service companies.

(iv) Future cash flows – Systems Ltd should consider its future cash flows from the expansion of the production facilities. When future cash flows may not be adequate to meet the repayment schedule of the borrowed funds management needs to negotiate the borrowing facility to match its cash flows. When enough cash flow will not be generated from the expansion to pay for the borrowed funds, the viability of the expansion should be reassessed.

(b) (i) Access to pool of capital – Listing on the stock exchange provides the opportunity for Systems Ltd to mobilize capital for expansion at a low cost.

(ii) Profile of Company – Listing on the stock exchange raises the profile of the company. Providers of finance prefer to deal with companies that are subjected to supervisory control. Listed companies are required to regularly provide information about their operations to the public

(iii) Raising funds from the stock exchange provides the opportunity for management and board to decide on when to pay out dividend to providers of funds instead of interest and principal which should be paid out annually.

(iv) Listing on the stock exchange provides control over management. The share price serves as an indicator of management's performance hence management takes decisions that will enhance the share value of the firm.

(c) (i) Managers' reward systems might encourage short-term results, for example if they are based on each year's reported earnings per share.

(ii) Fear of disappointing the markets and perhaps exposing the company to the threat of takeover, endangering the manager's jobs.

(iii) Managers are simply too busy dealing with short-term crisis to think of the longer term.

Factors to consider when Systems decides to raise the needed funds through borrowing:

(1) Cost of Borrowing

(2) Gearing

(3) Flexibility

(4) Size of company

(5) Control

Sustainable growth

Gordon

g = rb

r = ROA

b = Y of profits retained

r = 30,000 / 300,000 x 100 = 10%

b = 30,000 – 12,000 / 30,000 x 100 = 60%

= 10 x 60 = 6%

QUESTION 4

(a) STEP 1: Determine the amount of internal funds that can be generated at the given growth rate of 25%.

Proforma Income Statement	GH¢
Sales (400,000 x 1.25)	500,000
Less cost of sales (240,000 / 400,000 x 500,000 x (1 – 0.05)	285,000
Gross profit	215,000
Less operating expenses (120,000 x 1.3)	156,000
Net profit before tax	59,000
Less Taxation (25%)	14,750
Net profit after tax	44,250
Dividends (40% payout x 44,250)	71,700
Transfer to income surplus	26,550

STEP 2: Determine amount of external funding required using the proforma balance sheet.

	GH¢
Fixed Assets (220,000 / 400,000 x 500,000) or (220,000 x 1.25)	275,000
Current Assets (80,000 / 400,000 x 500,000)	100,000
	375,000
Less:	
Current Liabilities (60,000 / 400,000 x 500,000)	75,000
Long-term Debt (existing)	85,000
Shareholders' Fund (155,000 + 26,550)	181,550
	341,550
External Financing Needed	33,450

b) Internally Generated Growth rate =

$$\frac{\text{Return on Assets x Retention rate}}{1 - (\text{ROA x retention Rate})} \times 100$$

$$\text{ROA} = \frac{30{,}000}{300{,}000} \times 100 = 10\%$$

$$\text{Retention} = \left(1 - \frac{12{,}000}{30{,}000}\right) = 60\%$$

$$\text{Growth rate} = \frac{0.1 \times 0.6}{1 - (0.1 \times 0.6)} \times 100 = 6.38\%$$

This is the maximum growth rate Baylon can generate without any external financing.

c) Sustainable growth rate is the maximum growth rate the company can generate without any external equity financing while maintaining a constant debt-equity ratio.

$$\text{SGR} = \frac{\text{ROE x Retention Rate}}{1 - (\text{ROE x Retention Rate})} \times 100$$

$$\text{ROE} = \frac{30{,}000}{155{,}000} \times 100 = 19.35\%$$

$$\therefore \text{SGR} = \frac{19.35\% \times 60\%}{1 - (19.35\% \times 60\%)} \times 100 = 13.14\%$$

d) Other Growth Options

i) Entry into new markets

ii) Launch of new products

iii) Mergers and acquisitions

iv) Joint ventures

v) Leveraging (licensing, development of a new network of franchise partners)

vi) Diversification

QUESTION 5

(a) i. Optimal cash balance using Daumol model:

$$\text{Optimal cash balance} = \frac{\sqrt{2 \times \text{Annual Cash Usage} \times \text{Cost per Sale of Securities}}}{\text{Annual Interest Rate}}$$

$$= \frac{\sqrt{2 \times 5{,}500{,}000 \times 20}}{0.35}$$

$$= \text{GH¢}25{,}071$$

ii. The model assumes a steady cash usage rate and that the firm uses up cash. Most firms in reality have both cash inflows and outflows, which may not be steady.

(b) Miller – Orr Model

i. Spread between upper and lower cash balance limits

$$= 3\left(\frac{3}{4} \times \frac{\text{Transaction cost} \times \text{variance of cash flows}}{\text{Interest rate}}\right)$$

Standard deviation of Daily cash = GH¢65,000
:. Variance = 65,000 x 65,000
= 4,225,000,000

Daily Interest Rate = $\frac{0.35}{365}$
= 0.00096

Spread = $3\left(\frac{3}{4} \text{ X } \frac{20 \times 4{,}255{,}000{,}000}{0.00096}\right)$
= GH¢121,293

ii. Upper Limit = lower limit + spread
= GH¢50,000 + 121,293
= GH¢171,293

iii. Return point = lower limit + 1/3 of spread
= 50,000 + (1/3 x 121,293)
= 50,000 + 40,431
= 90,431

(c) i. Transaction motive: To meet the needs that arise in the ordinary course of business.

ii. Precautionary motive: To meet unspecified and unexpected contingencies that may arise.

iii. Speculative motive: To take advantage of profit-making opportunities that may develop.

iv. Compensating balance: Cash balances may be kept in the bank to compensate for banking services. Banks providing credit facilities may require for specific balances to be maintained in customer accounts. This may impose a lower limit on the level of cash a firm holds.

(d) i. Foreign Exchange Risk
This is the risk that the domestic currency value of cash flows denominated in foreign currency may change due to variations in the foreign exchange rate.

ii. These include forward contract, foreign currency option and money market operations.

1. Forward contract

This involves taking a full forward cover against foreign exchange exposure. It is an agreement to exchange currency at some time in the future at a pre-determined exchange rate, known as forward exchange rate. The company can for example contract with a bank to buy the US$ forward at an agreed fixed exchange rate.

Irrespective of the exchange rate prevailing at the end of the period, the company's cost will not change from what has been previously agreed.

2. Foreign Currency Option

This provides the right to buy or sell a currency at an agreed exchange rate (exercise price) on or before an agreed maturity period.
The right to buy is called a call option and the right to sell a put option.
A foreign currency option holder will exercise his/her right only if it is advantageous to do so.

3. Money market Operations

In this, the company can borrow now in foreign currency, convert it into the local currency at the current prevailing exchange rate and invest the money in the money market. If interest rate parity holds, the difference in the forward rate and spot rate is the reflection of the difference in the interest rates in the two countries.

iii. 1. Political Risk

This refers to changes in value that arise as a consequence of political actions. This may include blockage of funds, interruptions in operations, outright confiscation of assets, changes in legislation or civil strife.

2. Operating in unfamiliar terrain

There could be significant differences in the social, cultural and regulatory environments. This may cost the company if its not able to adapt properly.