



SCHOOL OF FINANCE AND APPLIED ECONOMICS  
BBS ACTUARIAL SCIENCE/BBS FINANCIAL ECONOMICS/BBS FINANCE  
END OF SEMESTER EXAMINATION  
BSF 1204: CORPORATE FINANCE

Date: Thursday 22nd March 2018

Time: 2 Hours

---

**Instructions**

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

**QUESTION ONE**

- a) The Board of Directors of Nanak Engineering Company Private Ltd. request you to prepare a statement showing the working Capital Requirements for a level of activity of 156,000 units of production.

The following informations are available for your calculations:

|                        |            |
|------------------------|------------|
| Raw Materials          | 90         |
| Direct Labour          | 40         |
| Overheads              | 75         |
|                        | <b>205</b> |
| Profit                 | 60         |
| Selling price per unit | <b>265</b> |

**Notes**

- i) Raw materials are in stock, on average one month.
- ii) Materials are in process, on average 2 weeks.
- iii) Finished goods are in stock, on average one month.
- iv) Credit allowed by suppliers (Material and overhead suppliers), one month.
- v) Time lag in payment from debtors, 2 months.
- vi) Lag in payment of wages, 2 weeks.

20% of the output is sold against cash. Cash in hand and at bank is expected to be Shs 60,000. It is to be assumed that production is carried on evenly throughout the year; wages and overheads accrue similarly and a time period of 4 weeks is equivalent to a month. (10 Marks)

- b) The following statement of financial position information relates to Tufa Co, a company listed on a large stock market which pays corporation tax at a rate of 30%.

|                               | Sh m | Sh m |
|-------------------------------|------|------|
| <b>Equity and liabilities</b> |      |      |
| Share capital                 | 17   |      |
| Retained earnings             | 15   |      |
|                               | ——   |      |
| Total equity                  |      | 32   |
| Non-current liabilities       |      |      |
| Long-term borrowings          | 13   |      |
| Current liabilities           | 21   |      |
|                               | ——   |      |
| Total liabilities             |      | 34   |
|                               |      | ——   |
| Total equity and liabilities  |      | 66   |
|                               |      | ——   |

The share capital of Tufa Co consists of Shs12m of ordinary shares and Shs5m of irredeemable preference shares.

The ordinary shares of Tufa Co have a nominal value of Shs0.50 per share, an ex dividend market price of Shs7.07 per share and a cum dividend market price of Shs7.52 per share. The dividend for 20X7 will be paid in the near future. Dividends paid in recent years have been as follows:

| Year                 | 2016 | 2015 | 2014 | 2013 |
|----------------------|------|------|------|------|
| Dividend (Shs/share) | 0.43 | 0.41 | 0.39 | 0.37 |

The 5% preference shares of Tufa Co have a nominal value of Shs0.50 per share and an ex dividend market price of Shs0.31 per share.

The long-term borrowings of Tufa Co consist of Shs10m of loan notes and a Shs3m bank loan. The bank loan has a variable interest rate.

The 7% loan notes have a nominal value of Shs100 per loan note and a market price of Shs102.34 per loan note. Annual interest has just been paid and the loan notes are redeemable in four years' time at a 5% premium to nominal value.

**Required:**

- i) Calculate the after-tax weighted average cost of capital of Tufa Co on a market value basis. (12 marks)
- ii) Discuss the circumstances under which it is appropriate to use the current WACC of Tufa Co in appraising an investment project. (3 marks)

- c) A bank offers you a seven-month certificate of deposit (CD) at a 7.06 percent annual rate that would provide a 7.25 percent effective annual yield. For the seven-month CD, is interest being compounded daily, weekly, monthly, or quarterly? And, by the way, having invested \$10,000 in this CD, how much money would you receive when your CD matures in seven months? (5 Marks)

## QUESTION TWO

- a) The directors of Kiza Co are considering a planned investment project costing Shs25m, payable at the start of the first year of operation. The following information relates to the investment project:

|                           | Year 1  | Year 2  | Year 3  | Year 4  |
|---------------------------|---------|---------|---------|---------|
| Sales volume (units/year) | 520,000 | 624,000 | 717,000 | 788,000 |
| Selling price (Shs/unit)  | 30.00   | 30.00   | 30.00   | 30.00   |
| Variable costs (Shs/unit) | 10.00   | 10.20   | 10.61   | 10.93   |
| Fixed costs (Shs/year)    | 700,000 | 735,000 | 779,000 | 841,000 |

This information needs adjusting to take account of selling price inflation of 4% per year and variable cost inflation of 3% per year. The fixed costs, which are incremental and related to the investment project, are in nominal terms. The year 4 sales volume is expected to continue for the foreseeable future.

Kiza Co pays corporation tax of 30% one year in arrears. The company can claim tax-allowable depreciation on a 25% reducing balance basis.

The views of the directors of Kiza Co are that all investment projects must be evaluated over four years of operations, with an assumed terminal value at the end of the fourth year of 5% of the initial investment cost. Both net present value and discounted payback must be used, with a maximum discounted payback period of two years. The real after-tax cost of capital of Kiza Co is 7% and its nominal after-tax cost of capital is 12%.

Required:

Calculate the net present value of the planned investment project. Is it financially acceptable? (10 marks)

- b) With reference to the agency theory, discuss the possible areas of conflicts between managers and shareholders (10 marks)

## QUESTION THREE

- a) Management of Ozuna Ltd intends to change the company's credit policy from 'net 30' to '3/10 net 60'. If this change is effected, annual sales are expected to increase by 25% from the current level of shs 12 million. The proportion of bad debts is also expected to increase from 10% to 15% of credit sales.

A new credit controller will also have to be employed at a cost of shs 500,000 per annum. If there is a change in the firm's credit policy, it is expected that 60% of credit customers will benefit from the cash discount offer.

The inventory level and variable costs are however expected to remain constant at 20% and 40% of the annual sales respectively. The firm's cost of capital is 14%.

Applicable tax rate is 30% and all sales are made on credit. Assume a 360 day year.

**Required:**

Advise on whether the co. should adopt the new credit policy (10 marks)

- b) The Rose Water Company expects with some degree of certainty to generate the following net income and to have the following capital expenditures during the next five years (in thousands of dollars):

|            | YEAR    |         |         |         |         |
|------------|---------|---------|---------|---------|---------|
|            | 1       | 2       | 3       | 4       | 5       |
| Net income | \$2,000 | \$1,500 | \$2,500 | \$2,300 | \$1,800 |
| Capex      | \$1,000 | \$1,500 | \$2,000 | \$1,500 | \$2,000 |

Capex = Capital expenditure

The company currently has 1 million shares of common stock outstanding and pays annual dividends of \$1 per share.

- i) Determine dividends per share and external financing required in each year if dividend policy is treated as a residual decision. (5 marks)
- ii) Determine the amounts of external financing that will be necessary in each year if the present annual dividend per share is maintained. (5 marks)

**QUESTION FOUR**

- a) Phobis Co has in issue 9% bonds which are redeemable at their par value of \$100 in five years' time.

Alternatively, each bond may be converted on that date into 20 ordinary shares of the company. The current ordinary share price of Phobis Co is \$4.45 and this is expected to grow at a rate of 6.5% per year for the foreseeable future. Phobis Co has a cost of debt of 7% per year.

**Required:**

Calculate the following current values for each \$100 convertible bond:

- i) market value; (4 marks)
- ii) floor value; (3 marks)
- iii) Conversion premium per share. (3 marks)
- b) Discuss whether changing the capital structure of a company can lead to a reduction in its cost of capital and hence to an increase in the value of the company. (10 marks)

## QUESTION FIVE

- a) The ordinary shares of Kwese Ltd are currently selling at Shs 60 each. The company's price-earnings ratio is 6 times.

Kwese Co. adopts a 40% pay-out ratio as its dividend policy. It is predicted that the co's earnings and dividend will grow at an annual rate of 10% for the first three years, 5% for the next two years and 4% thereafter in perpetuity.

The investors' minimum required rate of return is 12%.

Required:

- i) The current intrinsic value of shares (6 marks)
- ii) Advise the investors based on the results obtained above (2 marks)
- b) What are the pros and cons of separating the position of chairman of the board from that of CEO? (4 Marks)
- c) Suppose that your estimates of the possible one-year returns from investing in the common stock of the EABL Ltd were as follows:

|                           |      |     |     |     |     |
|---------------------------|------|-----|-----|-----|-----|
| Probability of occurrence | 0.1  | 0.2 | 0.4 | 0.2 | 0.1 |
| Possible return           | -10% | 5%  | 20% | 35% | 50% |

- i) What are the expected return and standard deviation?
- ii) Assume that the parameters that you just determined [under Part (a)] pertain to a *normal* probability distribution. What is the probability that return will be zero or less? Less than 10 percent? More than 40 percent? (Assume a normal distribution.) (8 Marks)

| <i>z</i> | .00   | .01   | .02   | .03   | .04   | .05   | .06   | .07   | .08   | .09   |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -1.3     | .0968 | .0951 | .0934 | .0918 | .0901 | .0885 | .0869 | .0853 | .0838 | .0823 |
| -1.2     | .1151 | .1131 | .1112 | .1093 | .1075 | .1056 | .1038 | .1020 | .1003 | .0985 |
| -1.1     | .1357 | .1335 | .1314 | .1292 | .1271 | .1251 | .1230 | .1210 | .1190 | .1170 |
| -1.0     | .1587 | .1562 | .1539 | .1515 | .1492 | .1469 | .1446 | .1423 | .1401 | .1379 |
| -0.9     | .1841 | .1814 | .1788 | .1762 | .1736 | .1711 | .1685 | .1660 | .1635 | .1611 |
| -0.8     | .2119 | .2090 | .2061 | .2033 | .2005 | .1977 | .1949 | .1922 | .1894 | .1867 |
| -0.7     | .2420 | .2389 | .2358 | .2327 | .2296 | .2266 | .2236 | .2206 | .2177 | .2148 |
| -0.6     | .2743 | .2709 | .2676 | .2643 | .2611 | .2578 | .2546 | .2514 | .2483 | .2451 |