

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

**YEAR IV SEMESTER II EXAMINATON FOR THE DEGREE OF BACHELOR OF COMMERCE**

**HBF 2403: FINANCIAL MODELLING AND FORECASTING**

**DATE:AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** Answer question one and any other two questions.

**QUESTION ONE**

a. In the context of time series, explain principal components of a time series.

(4 marks)

b. Explain differences between multiplicative and additive models as used in time series as state conditions under which each model is used. (4 marks)

c. The sales of Hasara Ltd (in millions of shillings for the year 2001 and 2004 inclusive are given below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Quarter |  |  |
| Year | 1 | 2 | 3 | 4 |
| 2010 | 40 | 64 | 124 | 58 |
| 2011 | 42 | 84 | 150 | 62 |
| 2012 | 46 | 78 | 154 | 96 |
| 2013 | 54 | 78 | 184 | 106 |

Required

i. Trend in the data using least square method. (8 marks)

ii. Estimated sales of each quarter of the year 2013. (4 marks)

iii. Percentage variation of each quarter actual sales for the year 2013. (4 marks)

d. Explain five elements of a good forecast. (10 marks)

**QUESTION TWO**

a. Explain four objectives of financial statement analysis. (4 marks)

b. Describe the use of four analytical techniques used in financial statements analysis.

(4 marks)

c. The following data are available fro sina chuki company ltd a small kiosk located near Mombasa ltd.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Year 5 | Year 4 | Year 3 | Year 2 | Year 3 |
| Sales | 174000 | 164000 | 156000 | 149600 | 146000 |
| Net income | 22560 | 22520 | 22000 | 21000 | 20400 |

Required

Restate trend data in terms of percentages using year 1 as the base year. (12 marks)

**QUESTION THREE**

a. ABC company achieved a turnover of ksh 16 million in the year that has just ended and expects turnover growth of 8.4% is next year. Cost of sales in the year that has just ended was ksh 10.88 million and other expenses were ksh 1.44 millions.

The financial statements of ABC ltd, for the year that has ended contain the following statement position.

|  |  |  |
| --- | --- | --- |
|  | Ksh | Ksh |
| Non current assets |  | 22 |
| Current assets |  |  |
| Inventory | 2.4 |  |
| Trade receivables | 2.2 | 4.6 |
| Total assets |  | 26.6 |
|  |  |  |
| Equity finance |  |  |
| Ordinary shares | 5.0 |  |
| Reserves | 7.5 | 12.5 |
| Long term bank loan |  | 22.5 |
|  |  |  |
| Current liabilities |  |  |
| Trade payables | 1.9 |  |
| Over draft | 2.2 | 4.1 |
| Total liabilities. |  | 26.6 |

The long term bank loan has a fixed annual interest rate of 8% per year. ABC ltd pays taxation at an annual rate of 30% per year.

The following accounting ratios have been forecast for the next year.

|  |  |
| --- | --- |
| Gross profit margin | 30% |
| Operating profit margin | 20% |
| Dividend payout ratio | 50% |
| Inventory turnover period | 110 days |
| Trade receivable period | 65 days |
| Trade payable period | 75 days |

Overdraft interest in the next year is forecasted to be ksh 140000. No change is expected in the level of non current assets and depreciation should be ignored.

Required

i. Prepare forecast income statement for the next year. (8 marks)

ii. Forecast statement of financial position at the end of the next year. (8 marks)

b. Many forecast are made at regular intervals because forecast errors are the rule rather than exception, there will be succession of forecast errors.

Required

List four possible sources of forecast errors. (4 marks)

**QUESTION FOUR**

a. Party Animal company produces frozen pizzas, which are sold primarily on college campuses. The following financial statements provide the following information,

Contemporary statement of financial position assets.

|  |  |  |
| --- | --- | --- |
| Assets | 2011 | 2010 |
| Current assets |  |  |
| Cash | 800 | 700 |
| Marketable securities | 450 | 300 |
| Accounts receivables | 12000 | 11000 |
| Inventory | 20000 | 17000 |
| Prepaid expenses | 250 | 300 |
| Total current assets | 33500 | 29300 |
| Long term investment | 500 | 550 |
| Property furnishings and equipment |  |  |
| Land | 6000 | 6000 |
| Buildings | 55000 | 52000 |
| Equipment and furnishings | 25000 | 23000 |
| Total assets | 86000 | 81000 |
|  | 120000 | 110850 |

liabilities and stockholders equity

Current liabilities.

|  |  |  |
| --- | --- | --- |
| Accounts payables | 7500 | 7050 |
| Accrued expenses | 2200 | 2100 |
| Notes payables | 3000 | 3200 |
| Total current liabilities | 12700 | 12350 |

long term liabilities

|  |  |  |
| --- | --- | --- |
| Bonds payable | 37300 | 35700 |
|  | 550000 | 48050 |
| Stock holders equity |  |  |
| Preferred stock | 6000 | 6000 |
| Common stock | 25000 | 24000 |
| Additional paid in capital | 4000 | 3800 |
| Retained earnings | 35000 | 29000 |
| Total stockholders equity | 70000 | 628000 |
| Total liability and stock equity | 120000 | 110850 |

Additional information

100000 shares of common stock were issued on January 2011

**PARTY ANIMAL**

Comparative income and retained earnings statement.

|  |  |  |
| --- | --- | --- |
|  | Year |  |
|  | 2011 | 2010 |
| Sales | 87000 | 82000 |
| Cost of goods sold | 60930 | 56350 |
| Gross margin | 26070 | 25650 |

|  |  |  |
| --- | --- | --- |
| Operating expenses |  |  |
| Selling expenses | 5000 | 4600 |
| Administrative expenses | 2000 | 2100 |
| Total operating expenses | 7000 | 6700 |
| Operating income | 19070 | 18950 |
| Interest expenses | 4030 | 3890 |
| Income before taxes | 15040 | 15060 |
| Income tax expenses | 3760 | 3800 |
| Net income | 11280 | 11260 |
| Dividend on preferred stock | 480 | 480 |
| Net income available to stock holders | 10800 | 10780 |
| Dividends on common stock | 4800 | 4600 |
| Net income added to retained earnings | 6000 | 6180 |
| Retained earning jan 1 | 29000 | 22820 |
| Retained earnings December 31 | 35000 | 29000 |

Required

i. Prepare common size balance sheet as of December 31 and common size and retained earnings statement (vertical analysis) (10 marks)

ii. Use horizontal technique in preparing balance sheet and income and retained earnings statement. (10 marks)

**QUESTION FIVE**

a. List the four major financial statement and briefly explain the relationship between them. (5 marks)

b. Describe five steps in forecasting process. (5 marks)

c. List six test practices that can transform budgeting into a value added activity.

(4 marks)

d. Explain two purposes of proforma financial statements. (4 marks)