



DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY
UNIVERSITY EXAMINATION ACADEMIC YEAR 2020/2021
EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN BUSINESS
ANALYTICS

BBM 6103 NUMERICAL BUSINESS ANALYSIS

SEPTEMBER, 2021

TIME: 3 HOURS

Instructions:
Attempt All Questions

Question One

- a) Fred argues, “The standards that I like most are the ones that eliminate all management discretion in reporting—that way I get uniform numbers across all companies and don’t have to worry about doing accounting analysis.” Do you agree? Why or why not? (5 marks)
- b) If management reports truthfully, what economic events are likely to prompt the following accounting changes?
- Increase in the estimated life of depreciable assets
 - Decrease in the uncollectible allowance as a percentage of gross receivables
 - Recognition of revenues at the point of delivery, rather than at the point cash is received
 - Capitalization of a higher proportion of software R&D costs (8 marks)
- c) Discuss, with examples, any red flags you would look for when carrying out an accounting analysis (12 marks)

Question Two

- a) Discuss specific information you would need to consider when undertaking a merger/acquisition analysis (13 marks)
- b) You are provided with the following financial statement figures from Bill’s Boats’.

Sales: \$1M

EBIT: \$500,000

Total Assets: \$2M

Book Value of Total Liabilities: \$1M

Retained Earnings: \$1M

Market Value of Equity: \$3M

Working Capital: \$500,000

Required

- i. Calculate the Altman score for the company
- ii. comment on its likelihood of insolvency (12 marks)

Question Three

The comparative financial statements of Stargel Inc. are as follows. The market price of Stargel Inc. common stock was \$119.70 on December 31, 2020.

Stargel Inc.		
Comparative Balance Sheet		
December 31, 2020 and 2019		
	Dec. 31, 2020	Dec. 31, 2019
Assets		
Current assets:		
Cash	\$ 500,000	\$ 400,000
Marketable securities	1,010,000	1,000,000
Accounts receivable (net)	740,000	510,000
Inventories	1,190,000	950,000
Prepaid expenses	250,000	229,000
Total current assets	\$3,690,000	\$3,089,000
Long-term investments	2,350,000	2,300,000
Property, plant, and equipment (net)	3,740,000	3,366,000
Total assets	\$9,780,000	\$8,755,000
Liabilities		
Current liabilities	\$ 900,000	\$ 880,000
Long-term liabilities:		
Mortgage note payable, 8.8%, due 2023	200,000	0
Bonds payable, 9%, due 2021	1,500,000	1,500,000
Total long-term liabilities	\$1,700,000	\$1,500,000
Total liabilities	\$2,600,000	\$2,380,000
Stockholders' Equity		
Preferred \$0.90 stock, \$10 par	\$ 500,000	\$ 500,000
Common stock, \$5 par	500,000	500,000
Retained earnings	6,180,000	5,375,000
Total stockholders' equity	\$7,180,000	\$6,375,000
Total liabilities and stockholders' equity	\$9,780,000	\$8,755,000

Stargel Inc.		
Comparative Income Statement		
For the Years Ended December 31, 2020 and 2019		
	2020	2019
Sales	\$10,000,000	\$9,400,000
Cost of goods sold	<u>5,350,000</u>	<u>4,950,000</u>
Gross profit	<u>\$ 4,650,000</u>	<u>\$4,450,000</u>
Selling expenses	\$ 2,000,000	\$1,880,000
Administrative expenses	<u>1,500,000</u>	<u>1,410,000</u>
Total operating expenses	<u>\$ 3,500,000</u>	<u>\$3,290,000</u>
Income from operations	\$ 1,150,000	\$1,160,000
Other income	<u>150,000</u>	<u>140,000</u>
	<u>\$ 1,300,000</u>	<u>\$1,300,000</u>
Other expense (interest)	170,000	150,000
Income before income tax	\$ 1,130,000	\$1,150,000
Income tax expense	<u>230,000</u>	<u>225,000</u>
Net income	<u>\$ 900,000</u>	<u>\$ 925,000</u>

Stargel Inc.
 Comparative Retained Earnings Statement
 For the Years Ended December 31, 2020 and 2019

	2020	2019
Retained earnings, January 1	\$5,375,000	\$4,545,000
Add net income for year	<u>900,000</u>	<u>925,000</u>
Total	\$6,275,000	\$5,470,000
Deduct dividends:		
On preferred stock	\$ 45,000	\$ 45,000
On common stock	<u>50,000</u>	<u>50,000</u>
Total	\$ 95,000	\$ 95,000
Retained earnings, December 31	\$6,180,000	\$5,375,000

Required:

- a) To the extent the data permit, calculate at least 14 ratios for each year (14 marks)
- b) Write a report to Mr. Kibet, a potential investor, on the suitability of Stargel Inc. as an opportunity. (7 marks)
- c) What other information would you need to properly advise Mr. Kibet? (4 marks)

Question Four

- a) Discuss any ethical issues that you should consider as an analyst (12 marks)
- b) A company stock is trading at \$110 per share. This company requires an 8% minimum rate of return and will pay a \$3 dividend per share next year (D1), which is expected to increase by 5% annually (g).
 - i. Calculate using Gordon Growth Model the value of the company's share
 - ii. Of what use is the figure calculated in (i) above (7 marks)
- c) Discuss the use of Foster Model in seasonal forecasting (6 marks)