

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Advanced Business Calculations Final Examination

Date : 1 September 2010

### **Please read these instructions carefully**

- a) Check that this set of examination paper consists of 7 pages including this page.
- b) Answer ALL questions.
- c) All essential workings must be shown.
- d) All answers must be corrected to two decimal places unless otherwise indicated.
- e) Write ALL your answers in the writing paper provided.

---

Total Marks for this paper : 100

Time Duration : 3 hours

Student Details
Name
CMND

**TOTAL MARKS**

--

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 1 [10 marks]

- A. Three years ago, Lucy Lu put \$5800 in a fixed deposit account that pays an interest of  $7\frac{1}{2}\%$  per annum. How much money does she have in the bank account now? [2 marks]
- B. Four years ago, Lolita Lo lent her boyfriend \$800 on simple interest. If her boyfriend has to pay her \$1952 now, what rate of interest did she charge? [2 marks]
- C. Labamba is considering depositing his savings in the bank. He is considering three banks:
- |            |   |
|------------|---|
| Ocean Bank | $8\frac{3}{4}\%$ per annum compounded daily.  |
| Sea Bank   | 9% per annum compounded monthly.              |
| River Bank | $9\frac{1}{4}\%$ per annum compounded yearly. |
- Which bank should he choose? Show your calculations to explain why. [4 marks]
- D. Baby Bui buys a bill of exchange for \$92 500 and 6 months later it matures for \$100 000. What is the interest rate of this bill? [2 marks]

## Question 2 [10 marks]

- A. Ah Mei bought \$1000 8% debenture at 96. She paid \$24 000.
- What is the nominal value of the debenture? [1 marks]
  - If she held the debenture for 2 years, what is the interest only percentage yield? [2 marks]
- B. Ah Gua bought 4500 shares of \$1 at \$2.45 each. His broker's commission was 1.5% of the nominal value of shares. He held the shares for two years before selling them for \$3.80 each. Dividends received by Ah Gua were:
- |        |     |
|--------|-----|
| Year 1 | 16% |
| Year 2 | 20% |
- How much did Ah Gua pay to buy the shares (including commission)? [2 marks]
  - Calculate the interest-only yield on the shares. [2 marks]
  - If commission for the sale was the same as the purchase, calculate the total profit earned by Ah Gua. [3 marks]

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 3 [20 marks]

Mong Cha Cha Ltd is considering buying two machines:

	<u>Machine A</u>	<u>Machine B</u>
Purchase cost	\$360 000	\$420 000
Useful life	5 years	5 years
Residual value	\$60 000	\$80 000
Annual operating expenses	\$24 000	\$28 000
Cash inflow		
Years 1 to 2	\$110 000	\$120 000
Years 3 to 5	\$140 000	\$150 000

A. Calculate the Payback Period of each machine. [4 marks]

B. Calculate the Accounting Rate of Return (ARR) of each machine.

$ARR = (\text{average annual profit} / \text{average cost of investment}) \times 100\%$

[4 marks]

C. Calculate the Net Present Value (NPV) of each machine at 8% and 16% interest rates. [8 marks]

1. Discount factor	8%	16%
2. Year 1	0.926	0.862
3. Year 2	0.857	0.743
4. Year 3	0.794	0.641
5. Year 4	0.735	0.552
6. Year 5	0.681	0.476

D. Calculate the Internal Rate of Return (IRR) of each machine. [4 marks]

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 4 [10 marks]

Gili Gulu Ltd went into liquidation. The Balance Sheet was as follows:

	£	£
Fixed Assets		55 000
Inventory	26 300	
Debtors	9 400	
Cash	<u>1 200</u>	
	36 900	
Trade Creditors	35 800	<u>1 100</u>
		56 100
Mortgage Loan		<u>30 000</u>
		<u>26 100</u>
Ordinary Share Capital		50 000
Retained Earnings		<u>(23900)</u>
		<u>26 100</u>

Liquidator's fees amounted to £2,450. Fixed assets realized £36,000. Inventory were sold for £16,300. £5,800 were recovered from debtors.

- Calculate the cash available after liquidation but before payments to the liquidator and creditors. [2 marks]
- Calculate the amount payable to the mortgage loan creditor. [1 mark]
- Calculate the dividend rate payable to unsecured creditors. [2 mark]
- Calculate the amount payable to an unsecured creditor who was owed £4,680. [2 marks]
- Calculate the amount owing to an unsecured creditor who received £10,920. [2 marks]
- Calculate the amount received by the ordinary shareholders. [1 marks]

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 5 [16 marks]

The following shows the Gross Domestic Product per capita of Singapura from the years 2000 to 2004.

2000	2001	2002	2003	2004
\$31,266	\$33,450	\$35,512	\$37,288	\$39,890

- A. Using year 2000 as the base year, what is the GDP relative for year 2002? (Correct to three significant figures) [2 marks]
- B. Using year 2000 as the base year, what is the GDP index for year 2003? (Correct to three significant figures) [2 marks]
- C. Calculate the chain base index for each year from 2001 to 2004. (Correct to 3 significant figures) [6 marks]
- D. If the chain base index for year 2005 is 110, what is the GDP index for this year with year 2000 as the base? (Correct to 3 significant figures) [2 marks]

The indices of the exports of Lala Land in 2009 is shown below:

Product	Weight	Index (base year 2000)
Diamond	250	185
Gold	128	94
Petroleum	382	216
Uranium	171	144
Military Hardware	69	173

- E. Calculate the composite index of all the exports of Lala Land in 2009 with year 2000 as the base year. (Correct to 3 significant figures) [4 marks]

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 6 [12 marks]

Kiasu bought a machine that cost \$35,000. It had an estimated useful life of 4 years and a scrap value of \$4536.

- A. Calculate the depreciation rate per year using the reducing balance method. [2 marks]
- B. Prepare a depreciation schedule that shows (i) the annual depreciation for each year, (ii) the accumulated depreciation for each year, (iii) the net book value at the end of each year. [6 marks]

Kiasu's brother, Kiasi, also bought a machine at the same time. It was depreciated by the equal instalment method over 5 years. It had an estimated scrap value of \$6,000. The annual depreciation was \$3,600.

- C. What was the cost of the machine? [2 marks]
- D. What percentage of cost was written off each year? [2 marks]

## Question 7 [10 marks]

Robo Corp sells only one product. The costs details are as follows:

Selling price per unit	\$20
Fixed costs per year	\$40,000
Variable costs per unit	\$12

- A. Draw a breakeven chart. [6 marks]
- B. Indicate on your chart, the break-even sales units. [1 mark]
- C. Indicate on your chart, the sales revenue at break-even. [1 mark]
- D. Indicate on your chart, the profit or loss at sales of 3,000 units. [1 mark]
- E. Indicate on your chart the sales units that would give a profit of \$8000. [1 mark]

# BrainBox Vietnam

Foreign Languages and Management Training Center

## Question 8 [12 marks]

Michael Tan, a sole trader, presents you with his financial statements for the year ended 31 December 2009:

	\$	\$
Fixed Assets at net book value		26,000
Stock	8,700	
Debtors	7,400	
Cash at Bank	2,200	<u>18,300</u>
		<u>44,300</u>
Creditors		3,600
Capital		<u>40,700</u>
		<u>44,300</u>
Sales		126,000
Cost of Goods Sold		<u>72,000</u>
Gross Profit		54,000
Operating Expenses		<u>35,200</u>
Net Profit		<u>18,800</u>

Calculate the following ratios (correct to 1 decimal place):

- A. Net Profit as a Percentage of Sales [2 marks]
- B. Rate of Stockturn. Opening stock was \$7,500. [2 marks]
- C. Debtors Collection Period [2 marks]
- D. Creditors Payment Period [3 marks]
- E. Explain the meaning of rate of stockturn. If Michael Tan sells candies and chocolates, is this ratio acceptable to you? [3 marks]