



ISRA UNIVERSITY

Islamabad Campus

Department of Electrical Engineering

Program: B.E. (Electrical)

Semester – Spring 2016

HS-321 Engineering Economics & Management

Quiz – 4

Marks: 10

Handout Date: 01/06/2016

Question # 1:

	2006
Net Sales	2,479,131
Cost of goods sold	1,758,980
Selling, general & admin expense	405,376
De pre ciation expense	19,371
Earnings before interest & tax	295,404
Net interest expense	16,560
Earnings before tax	278,844
Income tax expense	87,523
Earnings after tax	191,321
Dividends	10,000

	2006		2006
Net fixed assets	518,000	Owners equity	2,336,000
Cash	50,000	Long term debt	650,000
Accounts receivable	2,816,000	Short term debt	680,000
Inventories	2,394,000	Accounts payable	1,950,000
Prepaid expenses	42000	Accrued expenses	204,000
Total assets	5,820,000	Total liabilities & owners equity	5,820,000

Calculate the following

- Gross Profit Margin, Operating Profit Margin, Net Profit Margin and Retained Earnings
- Financial Structure, Capital Structure and Asset Structure
- Inventory Holding Period, Collection Period, Payment Period and Operating cycle

Solution

$$\begin{aligned}\text{Gross Profit Margin} &= \text{Gross profit} / \text{Sales revenue} \times 100\% \\ &= 2479131 - 1758980 / 2479131 \times 100\% \\ &= 29.049\%\end{aligned}$$

$$\begin{aligned}\text{Operating Profit Margin} &= \text{EBIT} / \text{Sales revenue} \times 100\% \\ &= 295404 / 2479131 \times 100\% \\ &= 11.916\%\end{aligned}$$

$$\begin{aligned}\text{Net Profit Margin} &= \text{EAT} / \text{Sales revenue} \times 100\% \\ &= 191321 / 2479131 \times 100\% \\ &= 7.717\%\end{aligned}$$

$$\begin{aligned}\text{Retained Earnings} &= \text{EAT} - \text{Dividends} \\ &= 191321 - 10000 \\ &= 181321\end{aligned}$$

$$\begin{aligned}\text{Financial Structure} &= \text{Invested capital} / \text{Owners Equity} \\ &= 2336000 + 650000 / 2336000 \\ &= 1.28\end{aligned}$$

$$\begin{aligned}\text{Capital Structure} &= \text{Owners Equity} / \text{Long term liabilities} \\ &= 2336000 / 650000 \\ &= 3.59\end{aligned}$$

$$\begin{aligned}\text{Asset Structure} &= \text{Fixed assets} / \text{Current assets} \\ &= 518000 / 5820000 - 518000 \\ &= 0.098\end{aligned}$$

$$\begin{aligned}\text{Inventory Holding Period} &= \text{Inventories} / \text{COS} \times 365 \\ &= 2394000 / 1758980 \times 365 \\ &= 497 \text{ days}\end{aligned}$$

$$\begin{aligned}\text{Collection Period} &= \text{Accounts receivable} / \text{Sales revenue} \times 365 \\ &= 2816000 / 2479131 \times 365 \\ &= 415 \text{ days}\end{aligned}$$

$$\begin{aligned}\text{Payment Period} &= \text{Accounts payable} / \text{COS} \times 365 \\ &= 1950000 / 1758980 \times 365 \\ &= 405 \text{ days}\end{aligned}$$

$$\begin{aligned}\text{Operating Cycle} &= \\ &= \text{Inventory Holding Period} + \text{Collection Period} - \text{Payment Period} \\ &= 497 + 415 - 405 \\ &= 507 \text{ days}\end{aligned}$$