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Assignment Unit: 3, 4.

1. D] IRR is the most reliable means of choosing between mutually exclusive projects.

2. A] $\text{Market price of share} = \frac{\text{Price earnings ratio}}{\text{Earnings per share}}$

3. D] All of the above.

4. D] 10,00,000

5. Given:

Sales = 2500

Cost = -1500

i. Cashflow at date 1 = $2500 - 1500$
 $= 1000 //$

ii. $NPV = \text{Net cashflow} \times \text{Discounting factor}$
 $= 1000 \times \left(\frac{1}{1.20} \right)^1$

$$= \frac{1000}{1.2}$$

$$NPV_A = 833.33 //$$

iii. $NPV_B = \frac{2500}{(1.20)^1} + \frac{-1500}{(1.20)^2}$

$$= 2083 - 1041.667$$

$$NPV_B = 1041.667 //$$

6. The ratios considered for analysis of business efficiency are:

i. Inventory Turnover Ratio:

- It is the number of times a company has sold and replenished its inventory over a specific amount of time.

- Inventory Turnover Ratio = $\frac{\text{Cost of goods sold}}{\text{Avg. inventories}}$

- Higher ratio is more desirable than a low one as it tends to points to strong sales.

- It depends upon inventory control, also known as stock control.

ii. Trade Receivable Receivables turnover Ratio:

- It measures the efficiency with which a company is able to collect on its receivables or the credit it extends to customers.

- It also measures no. of times a company's receivables are converted to cash at certain period of time.

- Trade Receivable turnover ratio = $\frac{\text{Net credit Sales}}{\text{Avg. accounts receivable}}$

- A high ratio indicates that company's collection of accounts receivable is efficient & that it has quality ~~ce~~ customers who pay off their debt quickly.

iii Trade Payable Period:

- This ratio indicates the credit period receivable by the company to make payments to its suppliers.
- Higher ratio indicates the company has larger credit period.

7. Limitations of ratio analysis are as follows:

- i. Diverts attention
- ii. Appropriate comparison.
- iii. Different industries.
- iv. Creative accounting.

8. i] The possible reasons for the stocks to trade at different betas in the stock are as follows:

- β (Beta) is the measure of systematic risk.
- It measures the volatility in the stocks compared to overall stock market.

- All companies face systematic risk, however some companies are exposed more to the market & thereby the risky than others.
- Different companies have different capital structures. If the company is unlevered/ungeared beta then it is different than the beta of geared/levered company.

$$ii. \beta_{geared} = \beta_{ungeared} \left[1 + \frac{D}{E} (1-t) \right]$$

$$1.1 = \beta_{ungeared} \left\{ 1 + \frac{1}{2} (1-30\%) \right\}$$

$$= \beta_{ungeared} \times 1.35$$

$$\therefore \beta_{ungeared} = 0.814$$

$$\text{When } D:E = 2:2 = 1:1.$$

$$\beta_{geared} = \beta_{ungeared} \left\{ 1 + \frac{2}{2} (1-30\%) \right\}$$

$$= (0.814) \times (1.70)$$

$$\beta_{geared} = 1.3838 //$$

9. D] In general the market value of investment trust is not correlated to the net present value.

10. i] $MPS = ₹70$

$DPS = ₹10$

$Growth = 8\%$

$R_F = 6\%$

$MRP = 5\%$

Solⁿ: When $\beta = 1$

Cost of Equity = Exp. DY + Growth.

$$R_E = \frac{10}{70} + 8\%$$

$$R_E = 22.285\%$$

$$R_E = 22.285$$

$$22.285 = 6\% + 5\% \times \beta$$

$$\beta = 3$$

ii. Beta is a coefficient which can measure the volatility of an individual stock compared to the systematic risk of the entire market.

- In statistical terms, beta represents the slope of the line through a regression of data points.

- Beta of TCS = $\frac{\text{Cov [TCS Market]}}{\text{Var}_{\text{MKT}}}$

$$= \frac{\sigma_{\text{TCS}}}{\sigma_{\text{MKT}}} \times \text{Corr}_{\text{TCS.MKT.}}$$

ii. Beta can be determined by dividing deviation of TCS / company stock prices by deviation of market prices multiplied by correlator between the company & market prices.

iii. A company with $\beta=1$ is the one in which one should invest.

Company which has Beta = 1 will give returns equal to market price.

iv. ~~Market~~ Treasury bills/bonds issued by government of any country are considered risk free or Beta of 0.

12.1. $D:E = 1:1$
 $R_F = 7\%$
 $E(M_R) - R_F = 5\%$
 Cost of Debt = 9%
 $\beta = 1.5$
 Tax = 25%

i.
$$WACC = \frac{\text{Net cost of Debt}}{\text{Debt} + \text{Eq.}} + \frac{\text{Net Cost of Eq.}}{\text{Debt} + \text{Eq.}}$$

$$\begin{aligned} \text{Cost of equity} &= R_F + \beta \times [E(M_R) - R_F] \\ &= 7\% + [1.5 \times 5\%] \\ &= 14.5\% \end{aligned}$$

$$\begin{aligned} \text{Net cost of Debt} &= \text{Cost of Debt} \times (1 - \text{tax rate}) \\ &= 9\% \times (1 - 25\%) \\ &= 6.75\% \end{aligned}$$

$$WACC = \frac{1}{2} \times 6.75\% + \frac{1}{2} \times 14.5\%$$

$$WACC = 10.625\%$$

ii. When debt repaid, Equity:

$$WACC = \frac{\text{Net cost of Debt} \times 0}{1+0} + R_E \times \frac{1}{1+0} = R_E$$

$$R_E = R_F + ERP \times \beta$$

As no debt we use ungeared beta.

$$\beta_{\text{geared}} = \beta_{\text{ungeared}} \times \left\{ 1 + \frac{D}{E} (1 - \text{tax}) \right\}$$

$$1.5 = \beta_{\text{ungeared}} \times \left\{ 1 + \frac{1}{1} (1 - 25\%) \right\}$$

$$\beta_{\text{ungeared}} = 1.75$$

$$\beta_{\text{geared}} = 0.8571 //$$

$$R_E = R_F + ERP \times \beta_{\text{geared}}$$

$$= 7\% + (5\% \times 0.8571)$$

$$R_E = 11.2857\% //$$

13. NPV =

14. i. Current Ratio = $\frac{\text{Current assets}}{\text{Current Liabilities}}$

- Current ratio is a liquidity ratio. It helps to assess the liquidity of a business.
- This ratio is used to assess whether the company will be able to pay its bill over the next few months.

b. Debtors turnover period = $\frac{\text{Trade receivables}}{\text{Credit Sales}} \times 365$.

- This ratio is also known as Trade turnover period.
- This ratio measures the avg. time in which the debtors settle their balance.

15. i. D:E = 1:1

Div. Yield = 4%.

GRY = 8%.

Investor should buy share as it has a manageable D:E ratio. It also has a good dividend yield i.e. Market price ₹100 it gives ₹4 as dividend.

$$WACC = NCD \times \frac{D}{D+E} + RE \times \frac{E}{D+E}$$

$$= \left(8\% \times \frac{1}{2} \right) + \left(4\% + \frac{1}{2} \right)$$

Cost of Capital = 6% //
