

Time value of money:

Important formulae:

P.V = Present value

F.V = Future value

Pmt = each year, per year,
Every year, equal installment
(Ex) $\frac{P}{n}$ $\frac{P}{4}$ $\frac{P}{12}$ $\frac{P}{4}$ $\frac{P}{12}$
Pmt $\frac{P}{n}$ cut Pmt $\frac{P}{4}$ $\frac{P}{12}$

1) $P.V = \frac{F.V}{(1+i)^n}$

2) $F.V = P.V (1+i)^n$

3) $P.V_A = Pmt \times PVIFA_{i,n} \text{ years}$

4) $F.V_A = Pmt \times FVIFA_{i,n} \text{ years}$

5) $EAR = (1 + \frac{i}{m})^m - 1$
Given,

a) Present value (P.V) = Rs 1,00,000

Interest rate (i) = 10%

No. of year (n) = 3 years
(2021-2024)

[2021-2024]

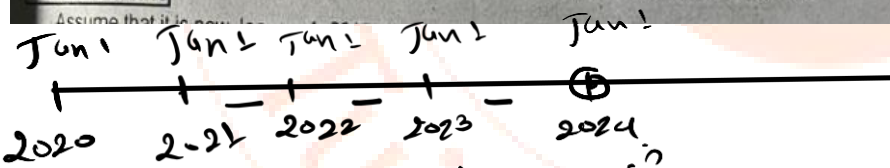
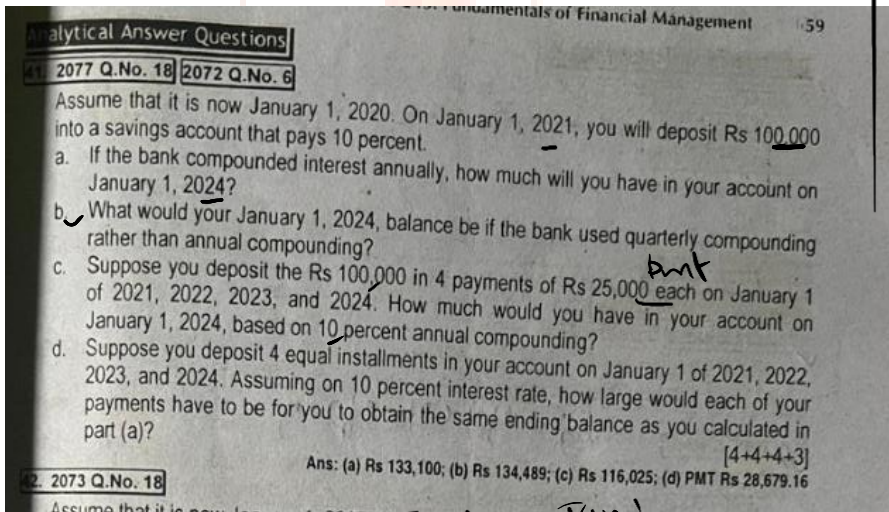
Future value (F.V) = ?

Now,

$F.V = P.V (1+i)^n$
 $= 1,00,000 (1+0.10)^3$

$= Rs. 1,33,100$

$P.V_A = Pmt \times PVIFA_{i,n} \text{ years}$



Interest paid = Compounded Annual $i; n$
Half yearly / Semi-year yearly $= \frac{i}{2}, n \times 2$
Compounded quarterly $= \frac{i}{4}, n \times 4$

BBS 2nd Year Finance

- unit 1: Introduction to financial management [2+10], 15m Theory
- unit 2: Financial statement Analysis \rightarrow 10m+2m [Num+Theory]
- unit 3: Time value of money [10+2] Fix [1Num.+Theory] +15
- unit 4: Fundamental of Risk & Return [15] Fix Num. ✓
- unit 5: Financial Asset valuation \rightarrow Num. 17m
 A) Bond valuation
 B) stock valuation.
- unit 6: cost of capital [10] Fix Num.
- unit 7: Capital structure & leverage [10+2] 3/13/21+8
- unit 8: Basis of capital budgeting [15m] Fix ✓ Num.
- unit 9: Working capital management [Th.+Num] \rightarrow 10m.
- unit 10: Distribution to shareholder (2+5) Theory, Num.

Unit-3 Time value of money: [2+10,15]

- # Present value (P.V) = Now, Present, Current, ^{deposit} Past Year
- # Future value (F.V) = Next year, Accumulated, Future
- # Payment (Pmt) = each year, installment, every year, per year

F.V.A
P.V.A
Table

$$\textcircled{1} \text{ - F.V} = \text{P.V} (1+i)^n$$

$$\text{or, } \text{P.V} = \frac{\text{F.V}}{(1+i)^n}$$

$$\text{or, } \text{P.V} = \text{F.V} \times \text{PVIF}_{i, n \text{ Yrs}}$$

$$\textcircled{2} \text{ P.V.A} = \text{Pmt} \times \text{PVIFA}_{i, n \text{ Yrs}}$$

$$\textcircled{3} \text{ F.V.A} = \text{Pmt} \times \text{FVIFA}_{i, n \text{ Yrs}}$$

$$\text{PVA} = \text{Pmt} \times \left[\frac{1 - \frac{1}{(1+i)^n}}{i} \right]$$

$$\text{FVA} = \text{Pmt} \times \left[\frac{(1+i)^n - 1}{i} \right]$$

If question given in due payment $(1+i)^n$ last n multiply

$$\textcircled{4} \text{ P.V} = \frac{\text{Pmt}}{i}$$

$$\textcircled{5} \text{ F.V} = c_0 (1+i)^n + c_1 (1+i)^{n-1} + c_2 (1+i)^{n-2} \times$$

$$\textcircled{6} \text{ P.V} = \frac{c_0}{(1+i)^0} + \frac{c_1}{(1+i)^1} + \frac{c_2}{(1+i)^2} \times$$

$$\textcircled{7} \text{ Effective Annual Rate EAR} = \left(1 + \frac{i}{m} \right)^m - 1$$

Tricks: Yearly - Annually \rightarrow

Half Yearly / semi Yearly $\rightarrow \frac{i}{2}, n \times 2$

quarterly $\rightarrow \frac{i}{4}, n \times 4$

Descriptive Answer Questions

3. 2080 Q.No. 12

Assume that it is now January 1, 2024. On January 1, 2025, you will deposit Rs. 400,000 into a savings account that pays 10 percent.

a. If the bank compounded interest annually, how much will you have in your account on January 1, 2028?

b. What would your January 1, 2028, balance be if the bank used quarterly compounding rather than annual compounding?

c. Suppose you deposit the Rs. 400,000 in 4 payments of Rs. 100,000 each on January 1 of 2025, 2026, 2027, and 2028. How much would you have in your account on January 1, 2028, based on 10 percent annual compounding?

Ans: (a) Rs 532,400 (b) Rs 537,956 (c) Rs 464,100

4. 2079 Q.No. 13 2072 Q.No. 6

Solⁿ

Given,

$$\text{January 1 2025 (PV)} = \text{Rs. } 4,00,000$$

$$\text{Interest rate (I)} = 10\% \text{ or } 0.10$$

$$\text{a) Jan 1 2028 (F.V)} = ?$$

$$\text{No. of Year (n)} = 3 \text{ Year}$$

Again,

$$\begin{aligned} F.V &= P.V (1+i)^n \\ &= 4,00,000 (1+0.10)^3 \\ &= 4,00,000 (1.10)^3 \\ &= \text{Rs. } 5,32,400 \end{aligned}$$

∴ Hence, we will have Rs. 5,32,400 in our saving account on Jan 1 2028.

b) Jan 1 2028 F.V = ? If bank use quarterly Compounding

$$\begin{aligned} F.V &= P.V \left(1 + \frac{i}{4}\right)^{n \times 4} \\ &= 4,00,000 \left(1 + \frac{0.10}{4}\right)^{3 \times 4} \\ &= 4,00,000 (1.34489) \\ &= \text{Rs. } 5,37,956 \end{aligned}$$

∴ Hence, we will have of Rs. 5,37,956 in our account on Jan 1, 2028 if interest is compounded quarterly.

c) Given,

$$\text{period (n)} = 4 \text{ Years.}$$

$$\text{Payment (Pmt)} = \text{Rs. } 1,00,000 \text{ each}$$

$$\text{Interest rate (I)} = 10\%$$

$$F.V_A = ?$$

Now,

$$F.V_A = Pmt \times FVIFA_{i, n \text{ yrs}}$$

$$= 1,00,000 \times FVIFA_{10\%, 4 \text{ Years}}$$

$$= 1,00,000 \times \left[\frac{(1+i)^n - 1}{i} \right]$$

$$= 1,00,000 \times \left[\frac{(1+0.10)^4 - 1}{0.10} \right]$$

$$= 1,00,000 \times \left[\frac{(1.10)^4 - 1}{0.10} \right]$$

$$= 1,00,000 \times 4.6410$$

$$= \text{Rs. } 4,64,100$$

∴ Hence, we have of Rs. 4,64,100 in our account in Jan = 2028,
if annually payment of each 4 years.

Table

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⑥ Co-variance between a stock A and stock B: $COV_{A \cdot B}$:

⑥ $COV_{A \cdot B} = \sum (R_A - \bar{R}_A) (R_B - \bar{R}_B) \times P \rightarrow$ If P.no. is given.

⑥ $COV_{A \cdot B} = \frac{\sum (R_A - \bar{R}_A) (R_B - \bar{R}_B)}{N-1} \rightarrow$ If probability is not given

⑦ Correlation between Return on stock A and stock B:

$$r_{A \cdot B} = \frac{COV_{A \cdot B}}{\sigma_A \cdot \sigma_B}$$

⑧ Capital Assets pricing model (CAPM) method:

\therefore Required rate of return (R_j) = $R_f + (R_m - R_f) \times \beta_j$
 \rightarrow If risk free rate is given;

⑨ Beta coefficient of stock j (β_j) = $\frac{COV_{A \cdot M}}{\sigma^2_M}$

⑩ Rate of return (R) = $\frac{P_1 - P_0 + D_1}{P_0}$

\therefore current yield (C.Y) = $\frac{D_1}{P_0}$

\therefore capital gain yield (C.G.Y) = $\frac{P_1 - P_0}{P_0}$

Brief Answer Questions

1. 2079 Q.No. 9
 Stock Y has a beta of 1.45 and expected return of 17 percent. If the risk free rate is 6 percent and market risk premium is 7.5 percent. Is the stock correctly priced? [2]
 Ans: 16.875%

2. 2077 Q.No. 7 2073 Q. No. 7
 Assume that the risk-free rate is 6 percent and the market risk premium is 8 percent. Beta of Stock J is 1.5. Calculate required rate of return on Stock J. [2]

3. 2076 Q.No. 4

①

→ Solⁿ Given.

$$\text{Beta of stock Y } (\beta_Y) = 1.45$$

$$\text{Expected return} = 17\%$$

$$\text{Risk free rate } (R_f) = 6\%$$

$$\text{Market risk premium } (R_m - R_f) = 7.5\%$$

Now,

New Required Rate of return =

$$R_f + (R_m - R_f) \times \beta_Y$$

$$= 6\% + 7.5\% \times 1.45$$

$$= 16.875\%$$

∴ Since, stock Y required rate of return is 16.875% is expected return lower than 17%. ∴ So, this stock is not correctly priced because of it's underpriced.

② Solⁿ

$$R_f = 6\%$$

$$R_m - R_f = 8\%$$

$$\beta_J = 1.5$$

Expected return of stock J = ?

$$R_J = R_f + (R_m - R_f) \times \beta_J$$

$$= 6\% + 8\% \times 1.5$$

$$= 18\% \text{ Ans}$$

3. 2076 Q.No. 4 [2]
 Ans: 18%

Suppose you invested Rs 35,000 in Stock A that has a beta coefficient of 0.8 and Rs 40,000 in stock B that has a beta coefficient of 1.4. What is your portfolio's beta?

4. 2075 Q.No. 7 [2]
 H.W
 Ans: 1.12

Assume that the risk-free rate is 8 percent and the market risk premium is 6 percent. Beta of Stock J is 2. Average rate of return on Stock J is 18 percent. Is Stock J correctly priced?

5. 2074 Q.No. 4 [2]
 H.W
 Ans: E(R) 20%

A portfolio consists of Stock A and Stock B with beta 0.9 and 1.6, respectively. If Stock A consists of 80 percent investment in the portfolio, what will be the portfolio beta?

Ans: 1.04

$w_A = 80\% = 0.80$
 $w_B = 20\% = 0.20$

Q.14.3 solⁿ Given, $\frac{x+y}{x+y}$ probability & weight \rightarrow decimal $\frac{x}{x+y}$

$$\text{Stock A} = \frac{35,000}{75,000} = 0.4667$$

$$\text{Beta coefficient of stock A } (\beta_A) = 0.8$$

$$\text{Stock B} = \frac{40,000}{75,000} = 0.5333$$

$$\text{Beta coefficient of stock B } (\beta_B) = 1.4$$

Now,

$$\begin{aligned} \text{Portfolio Beta} &= w_A \times \beta_A + w_B \times \beta_B \\ &= 0.4667 \times 0.8 + 0.5333 \times 1.4 \\ &= 1.12 \end{aligned}$$

$$\begin{aligned} \therefore \text{Total investment} &= 35,000 + 40,000 \\ &= \text{Rs. } 75,000 \end{aligned}$$

6. 2077 Q.No. 12

Consider the following information associated with Stock A and Stock B given in the following table.

	Stock A	Stock B
Average rate of return	12%	18%
Standard deviation of returns	6%	8%
Covariance of stock returns	-38.4	
Coefficient of correlation of stock returns	-0.8	

- Which one stock is more risky? Which one stock would you prefer? [2]
- If you form a portfolio of Stock A and Stock B comprising 60 percent wealth in Stock A and the rest in Stock B, calculate the risk and return of your portfolio. [4]
- Assume risk-free rate and market return are 8% and 15% respectively. Covariance between Stock A and market return is 54 and variance of market return is 36, calculate beta of Stock A. what is the required rate of return on Stock A? [4]

Ans: (a) 0.5; 0.4444; Stock B; (b) $E(R_p)$ 14.4%; σ_p 2.18%; (c) β_A 1.5; $E(R_A)$ 18.5%



2060 long \rightarrow 15 marks

MGT 215: Fundamentals of Financial Management 85

State of economy	Probability	Stock A	Stock B
1	0.3		
2	0.4	0%	25%
3	0.3	20	15
		30	5

a. Calculate the expected return and standard deviation of Stock A and Stock B.
 b. What are the covariance and correlation coefficient between Stock A and Stock B?
 c. If you form a portfolio of Stock A and Stock B comprising 40 percent wealth in Stock A and the rest in Stock B, calculate the portfolio return and standard deviation. Also interpret the results.
 d. What advantage an investor can achieve by investing his/her fund in the combination of stock A and Stock B instead of investing total fund either in stock A or Stock B? Explain.

Ans: (a) $E(R_A) = 17\%$; $E(R_B) = 15\%$; $\sigma_A = 11.87\%$; $\sigma_B = 7.75\%$ (b) $COV_{AB} = -90$; $\rho_{AB} = -0.98$; (c) $E(R_p) = 15.8\%$; $\sigma_p = 0.94\%$

34. 2079 Q.No. 18

solⁿ let p be probability

state of Economy	P	R_A	R_B	$R_A \times P$	$R_B \times P$	$(R_A - E(R_A))^2 \times P$	$(R_B - E(R_B))^2 \times P$	$(R_A - E(R_A)) \times (R_B - E(R_B)) \times P$
1	0.3	0%	25%	0%	7.5%	86.7	30%	-51%
2	0.4	20%	15%	8%	6%	3.6%	0	0
3	0.3	30%	5%	9%	1.5%	50.7%	30%	-39%
				$\sum R_A \times P = 17\%$	$\sum R_B \times P = 15\%$	$\sum (R_A - E(R_A))^2 \times P = 141\%$	$\sum (R_B - E(R_B))^2 \times P = 60\%$	$\sum (R_A - E(R_A)) \times (R_B - E(R_B)) \times P = -90$

© cap of expected return of stock A ($E(R_A) = \sum R_A \times P = 17\%$).

Expected return of stock B ($E(R_B) = \sum R_B \times P = 15\%$).

$$\begin{aligned} \# \text{ standard deviation of stock A } (\sigma_A) &= \sqrt{\sum (R_A - E R_A)^2 \times P} \\ &= \sqrt{141} \\ &= 11.87\% \end{aligned}$$

$$\begin{aligned} \# \text{ standard deviation of stock B } (\sigma_B) &= \sqrt{\sum (R_B - E R_B)^2 \times P} \\ &= \sqrt{60} \\ &= 7.75\% \end{aligned}$$

$$\begin{aligned} \textcircled{b} \text{ COV}_{A \cdot B} &= \sum (R_A - E R_A) (R_B - E R_B) \times P \\ &= -90 \end{aligned}$$

$$\begin{aligned} \# \text{ Correlation coefficient } (r_{A \cdot B}) &= \frac{\text{COV}_{A \cdot B}}{\sigma_A \cdot \sigma_B} \\ &= \frac{-90}{11.87 \times 7.75} \\ &= -0.98 \end{aligned}$$

\therefore Hence, The return from stock A and B are highly negative correlated.

© Weight of stock A (W_A) = 40% or 0.40
 " " " B (W_B) = 60% or 0.60

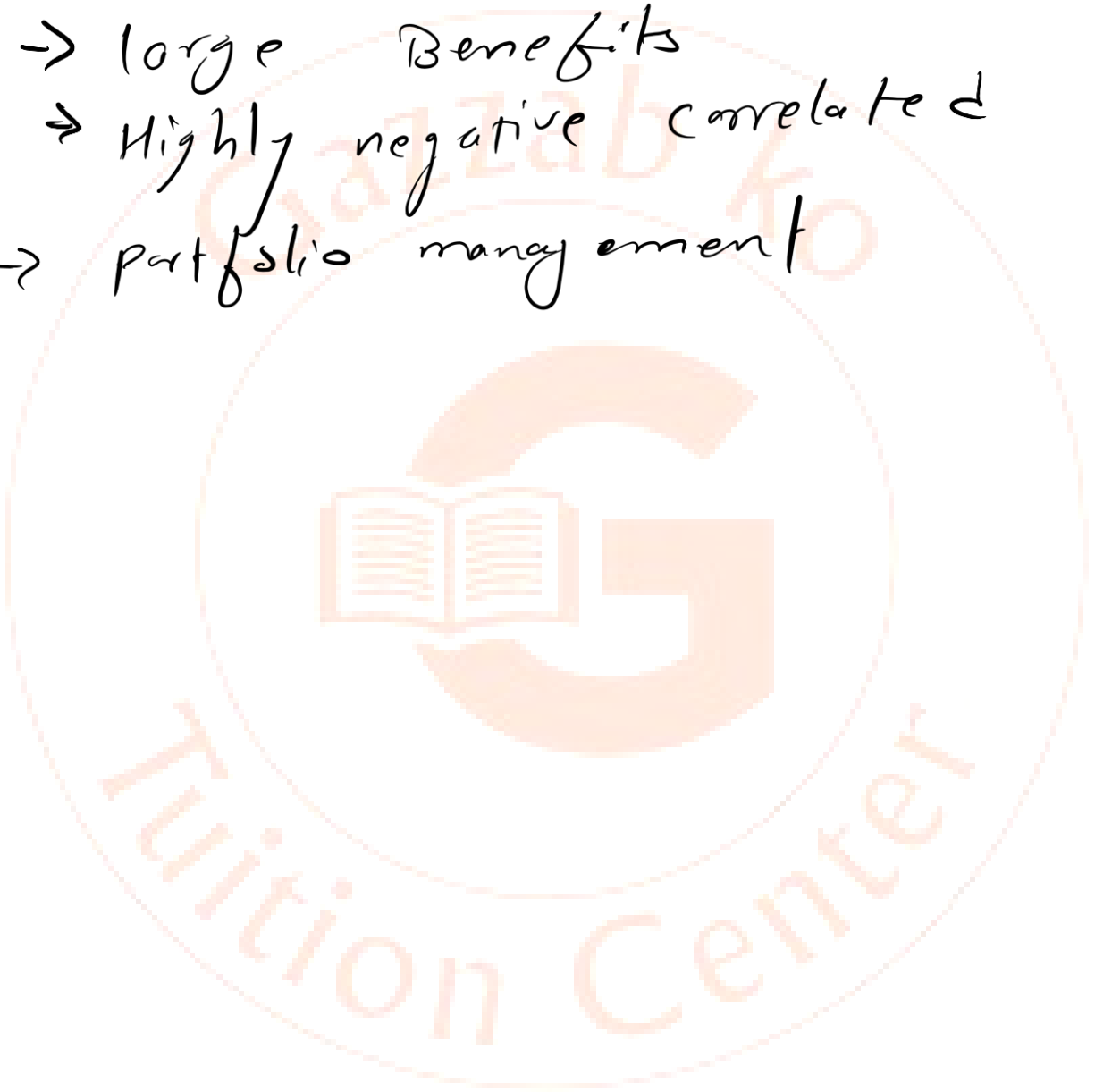
$$\begin{aligned} \text{Portfolio Return (ER}_p) &= W_A \times ER_A + W_B \times ER_B \\ &= 0.40 \times 17\% + 0.60 \times 15\% \\ &= 15.8\% \end{aligned}$$

Portfolio of standard deviation (σ_p) = ?

$$\begin{aligned} &\sqrt{W_A^2 \times \sigma_A^2 + W_B^2 \times \sigma_B^2 + 2 \text{COV}_{AB} \cdot W_A \cdot W_B} \\ &= \sqrt{0.40^2 \times 11.87^2 + 0.60^2 \times 7.75^2 + 2 \times -90 \times 0.40 \times 0.60} \\ &= \sqrt{0.89} \\ &= 0.94\% \end{aligned}$$

∴ Hence, portfolio of stock A and B
 is 15.8% and portfolio is 0.94%

- ① Advantage of investor for:
- Risk minimization / Reduction
 - large Benefits
 - Highly negative correlated
 - Portfolio management



34. 2079 Q.No. 18

Consider the probability distribution of alternative rates of return associated with stock A and B given in the following.

State of economy	Probability	Stock A	Stock B
1	0.3	-20%	5%
2	0.3	30%	25%
3	0.4	40%	30%

- Calculate the expected return and standard deviation of Stock A and Stock B.
- What are the covariance and correlation coefficient between Stock A and Stock B?
- If you form a portfolio of Stock A and Stock B comprising 70 percent wealth in Stock A and the rest in Stock B, calculate the risk and return of your portfolio. Are you able to diversify the risk forming the portfolio?
- Covariance between stock B and market is 140 and standard deviation of market is 9 percent. If risk free rate is 6 percent and market risk premium is also 4 percent, calculate required rate of return on Stock B. Is Stock B overpriced or underpriced?

Ans: (a) $E(R_A) = 19\%$; $E(R_B) = 21\%$; $\sigma_A = 25.87\%$; $\sigma_B = 10.68\%$ (b) $COV_{AB} = 276$; $\rho_{AB} = 0.9989$ (c) $E(R_p) = 19.6\%$; $\sigma_p = 21.31\%$ (d) $k_B = 12.92\%$

35. 2078 Q.No. 18

5

Given.

(d) Covariance between stock B & M ($COV_{B,M}$) = 140
Standard deviation of market (σ_M) = 9%

Risk-free rate (R_f) = 6%

Market risk premium ($R_M - R_f$) = 4%

Required rate of return on stock B.

Now,

$$\begin{aligned} \text{Required Rate of return } (R_B) &= R_f + (R_M - R_f) \times \beta_B \\ &= 6\% + 4\% \times 1.73 \\ &= 12.92\% \end{aligned}$$

16

Coefficient of stock β for B

Now,

$$\begin{aligned}\beta_B &= \frac{COV_{B.M}}{(\sigma_M)^2} \\ &= \frac{140}{9^2} \\ &= 1.73\end{aligned}$$

\therefore Hence, the stock B is underpriced. Because expected return of stock B mentioned above is 21%. But CAPM method 12.92%.



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12. 2071 Q.No. 5

0.606% (c) CV_A is the lowest, we would prefer stock

The past five years' rate of return from Stock A and Stock B are as below:

Year	Return on Stock A	Return on Stock B
2007	10%	15%
2008	30	-10
2009	-10	25
2010	5	20
2011	10	15

- Compute the average return on Stock A and Stock B.
- Determine the standard deviation of return on Stock A and Stock B.
- Suppose an investor forms a portfolio of the two stocks investing 50 percent of his/her funds in each stock. Compute the return of the portfolio and the portfolio standard deviation.
- Interpret the result.

Ans: (a) R_A 9%, R_B 13%; (b) σ_A 14.32%, σ_B 13.51%; (c) R_p 11%, σ_p 22%

[3+3+3+1]

3. 2070 Q.No. 7

592

Year	R_A	R_B	$(R_A - \bar{R}_A)^2$	$(R_B - \bar{R}_B)^2$
1 2007	10%	15%	$(10-9)^2 = 1\%$	
2 2008	30%	-10%	441%	
3 2009	-10%	25%	361%	
4 2010	5%	20%	16%	
5 2011	10%	15%	1%	
	$\Sigma R_A = 45\%$	$\Sigma R_B = 65\%$	$\Sigma (R_A - \bar{R}_A)^2 = 820\%$	

$$\textcircled{a} \text{ Average return on stock A } (\bar{R}_A) = \frac{\Sigma R_A}{N} \quad \left| \quad \bar{R}_B = \frac{\Sigma R_B}{N}$$

$$= \frac{45\%}{5} \quad \left| \quad \frac{65\%}{5}$$

$$= 9\% \quad \left| \quad = 13\%$$

⑥ Calc of standard deviation of Both stock

$$\sigma_A = \sqrt{\frac{\sum (R_A - \bar{R}_A)^2}{n-1}}$$

$$= \sqrt{\frac{820}{4}}$$

$$= \sqrt{205}$$

$$= 14.32\%$$

$$\sigma_B = \sqrt{\frac{\sum (R_B - \bar{R}_B)^2}{n-1}}$$

⑦ Average portfolio $\bar{R}_p = \frac{\sum R_p}{n}$

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36. 2076 Q.No. 18

Consider the following probability distribution of market return and the return on Stock A:

Probability	Market return	Stock A's return
0.3	15%	20%
0.4	9	5
0.3	18	12

- What are the expected return and standard deviation of market and the Stock A?
- Calculate the covariance between return from market and the Stock A.
- If you form a portfolio investing 60% in market and 40% in Stock A, what are the expected return and standard deviation of this portfolio?
- Calculate beta coefficient of Stock A. What does it indicate?
- If risk-free rate of return is currently 6%, what is the CAPM return for Stock A? Is Stock A worth investing?

Ans: (a) $E(R_M)$ 13.5%; $E(R_A)$ 11.6%; σ_M 3.85%; σ_A 6.22% (b) 16.2 (c) 12.74% and 4.39% (d) 1.091 (e) 14.8%

class work
solⁿ
probability be P

P	R_M	R_A	$R_M \times P$	$R_A \times P$	$(R_M - E(R_M))^2 \times P$	$(R_A - E(R_A))^2 \times P$	$(R_M - E(R_M))(R_A - E(R_A)) \times P$
0.3	15%	20%	4.5%	6%	0.675%	21.675%	-
0.4	9%	5%	3.6%	2%	8.1%	16.9%	-
0.3	18%	12%	5.4%	3.6%	6.075%	0.075%	- 20.0??
			$\sum R_M \times P =$ 13.5%	$\sum R_A \times P =$ 11.5%	$\sum (R_M - E(R_M))^2 \times P =$ 14.85%	$\sum (R_A - E(R_A))^2 \times P =$ 38.65%	

Expected return of stock market ($E(R_M)$) = $\sum R_M \times P$
= 13.5%

Expected return of stock A ($E(R_A)$) = $\sum R_A \times P$
= 11.5%

$$\begin{aligned} \# \text{ standard deviation of stock m } (\sigma_m) &= \sqrt{\sum (R_m - E R_m)^2 \times P} \\ &= \sqrt{14.85} \\ &= 3.85\% \end{aligned}$$

$$\begin{aligned} \# \text{ standard deviation of stock A } (\sigma_A) &= \sqrt{\sum (R_A - E R_A)^2 \times P} \\ &= \sqrt{38.65} \\ &= 6.21\% \end{aligned}$$

⑥ cal² of covariance of Both stock m and A

$$COV_{m,A} = \sum (R_m - E R_m) (R_A - E R_A) \times P$$

Cost of capital Unit - 6 10 marks fixed

→ cost of debt.

→ Cost of preferred stock

→ Cost of common stock

→ Cost of Retain Earning

} → cost of equity

① Cost of debt after tax (k_{dt}):

$$k_{dt} = k_d(1-t) \quad \left[\begin{array}{l} \text{where } k_d = \\ \text{Cost of debt before tax} \\ t = \text{tax rate} \end{array} \right]$$

$$\therefore k_d = \frac{I}{NP} \quad \left[\begin{array}{l} I = \text{Interest} \\ \text{no maturity period} \end{array} \right]$$

$$\therefore k_d = \frac{I + \frac{M - NP}{n}}{\frac{M + 2NP}{3}} \quad \left[\begin{array}{l} M = \text{Maturity value} \\ n = \text{number of periods} \\ \text{maturity period is given} \end{array} \right]$$

② cost of preference stock

$$\therefore k_{ps} = \frac{DP_s}{NP}$$

$\left[\begin{array}{l} DP_s = \text{Dividend / Dividend per share} \\ NP = \text{New price} \end{array} \right]$

$$\therefore k_{PS} = \frac{DP_s + \frac{M - NP}{n}}{\frac{M + 2NP}{3}}$$

③ Cost of Equity

Internal
[Retained Earning]

$$k_I = \frac{D_1}{P_0} + g$$

Where,

D_1 = Expected Dividend / Next Year Dividend /
 1 → 1 प्रति बरस राकषा जाते बरस Future को बरस आबे
 D_0 = last Year / This year / current year / Now / present
 0 → 0 Past 2 Present या 0 राबे
 P_0 = stock current price
 g = growth rate

$$\begin{aligned} D_1 &= D_0 (1+g) \\ D_2 &= D_1 (1+g) \end{aligned}$$

CAPM cost of equity

$$k_s = R_f + (R_m - R_f) \times \beta$$

where

R_f = Risk free rate

$R_m - R_f$ = market risk premium

β = Beta

वजन \rightarrow वजन !

23 \downarrow

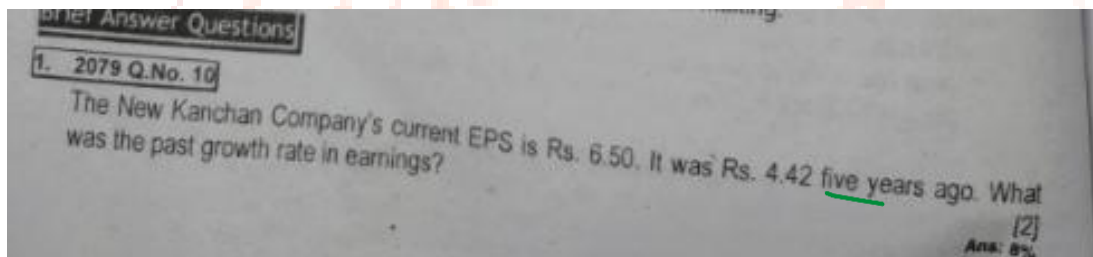
Weighted Average cost of Capital (WACC) =

$$k_d \times w_d + k_{ps} \times w_s + k_i \times w_i + k_e \times w_e$$

Formula for EPS =

$$EPS_c = (EPS_p (1+g))^n$$

current EPS previous EPS



soln

Given,

Current EPS = Rs. 6.50

Previous EPS = Rs. 4.42

growth rate (g) = ?

No. of Year (n) = 5 Years.

Now, we know that

$$EPS_c = EPS_p (1+g)^n$$

$$\therefore 6.50 = 4.42 (1+g)^5$$

$$\therefore \frac{6.50}{4.42} = (1+g)^5$$

$$\therefore 1.4706 = (1+g)^5$$

$$\therefore 1.4706^{\frac{1}{5}} = (1+g)^{5 \times \frac{1}{5}}$$

$$\therefore 1.0802 = 1+g$$

$$\therefore 1.0802 - 1 = g$$

$$\text{if } 212 = (1.12)^n$$

Taking log on both side

$$(1+g)^5 = 1.4706$$

$$\log 1.4706 = n \log 1.12$$

$$n = \frac{\log 1.4706}{\log 1.12}$$

$$n = ??$$

$$r, 0.0802 = g$$

$$\therefore \text{growth rate} = 8.0187\% \text{ Ann}$$

2. 2080 Q.No. 16

Sahara Company has the following capital structure, which it considers to be optimal:

Debt	40%
Preferred stock	10
Common equity	50
	100%

Sahara's current dividend per share is Rs 30. Investors expect future earnings and dividends to grow at a constant rate of 5 percent per year forever. The company's stock currently sells for Rs 280 per share. New common stock can be sold for Rs 250 per share. Preferred stock can be sold with a dividend of Rs 14 to the public at a price of Rs 95 per share. Debt can be sold at an interest rate of 10 percent. Assume the applicable tax rate is 30 percent.

- Calculate the cost of each capital component.
- Calculate the weighted average cost of capital (WACC) assuming equity requirement is fulfilled from external equity only. *Retained earning $\frac{52}{50}$*
- What are the uses of cost of capital?

[6+3+1]

Ans: (a) $k_{DT} = 17.6\%$; $k_{PS} = 14.74\%$; $k_S = 16.25\%$; $k_E = 17.6\%$ (b) 12.399%

Given,

$$\text{Weight of Debt } (w_D) = 40\% \text{ or } 0.40$$

$$\text{Weight of preferred stock } (w_P) = 10\% \text{ or } 0.10$$

$$\text{Weight of common equity } (w_E) = 50\% \text{ or } 0.50$$

$$\text{Current Dividend per share } (D_0) = \text{Rs. } 30$$

$$\text{Expected growth rate } (g) = 5\% \text{ or } 0.05$$

$$\text{Current stock price } (P_0) = \text{Rs. } 280 \text{ per share}$$

$$\text{New common stock, Net proceed } (NP) = 250 \text{ per share}$$

$$\text{Preferred stock Dividend } (D_P) = \text{Rs. } 14$$

$$\text{Price for dividend New price } (NP) = \text{Rs. } 95$$

Interest rate for debt before tax (k_d) = 10%
 Tax Rate (T) = 30%.

① Cost of each Capital

Cost of debt after tax (k_{dt}) = $k_d(1-T)$
 $= 10\% \cdot (1 - 0.30)$
 $= 7\%$

Cost of preferred stock (k_{ps}) = $\frac{D_{ps}}{NP}$
 $= \frac{14}{95}$
 $= 0.1474$ or 14.74%

Cost of Equity:

Internal (Retained Earning)

$$k_E = \frac{D_1}{P_0} + g$$

$$= \frac{31.50}{280} + 0.05$$

$$= 0.1625 \text{ or } 16.25\%$$

Fix 4

External:

$$k_e = \frac{D_1}{NP} + g$$

$$= \frac{31.50}{250} + 0.05$$

$$= 0.1760 \text{ or } 17.60\%$$

where,

$$D_1 = D_0(1+g)$$

$$= 30(1+0.05)$$

$$= \text{Rs. } 31.50$$

② Calc of Weighted Average cost of Capital [WACC]:

We know;

$$WACC = W_d \times k_{dt} + W_{ps} \times k_{ps} + W_s \times k_E$$

$$= 0.40 \times 7\% + 0.10 \times 14.74\% + 0.50 \times 16.25\%$$

$$= 12.3990\%$$

∴ Hence, the weighted Average cost of capital is 12.3990% Ans

③ Uses of Cost of Capital are:

a) Investment Decision making.

b) Performance Evaluation.

c) Financial Decision making.

d) Risk management

e) valuation of Business Assets.

Q. 2078 Q.No. 19 Ans: (a) 14.425% (b) Yes

Mega Company has the following capital structure, which it considers to be optimal:

Debt	30%
Preferred stock	20
Common equity	50
	100%

Mega's current dividend per share is Rs 15. Investors expect future earnings and dividends to grow at a constant rate of 6 percent per year forever. The company's stock currently sells for Rs 180 per share. New common stock can be sold for Rs 150 per share. Preferred stock can be sold with a dividend of Rs 12 to the public at a price of Rs 90 per share. Debt can be sold at an interest rate of 10 percent. Assume the applicable tax rate is 40 percent.

a. Calculate the cost of each capital component.

b. Calculate the weighted average cost of capital (WACC) assuming equity requirement is fulfilled from retained earning only. [6+4]

Ans: $k_D = 6\%$; $k_P = 14.83\%$; $k_E = 16.6\%$; $k_{WA} = 13.33\%$ (b) 11.881%

Same as 2080 and you will find videos of 2078 question answer in paid group.....✓

[5+3+1]

Ans: (a) $k_{dt} = 17.6\%$; $k_{ps} = 14.74\%$; $k_e = 16.25\%$; $k_w = 17.6\%$ (b) 12.399%

2079 Q.No. 15 2064 Q.No. 8 2062 Q.No. 3

The small tool company was recently formed to manufacture a new product. The company has the following capital structure in the beginning of the year 2021.

13% Debenture of 2030	Rs. 6 million
8% Preference stock	Rs. 2 million
Common stock (80,000 shares of Rs. 100)	Rs. 8 million
Total	Rs. 16 million

The common stock sells for Rs. 200 a share on this date. Last year company paid dividend of Rs. 20 per share and expected to grow at the rate of 10 percent. The company has a marginal tax rate of 40 percent.

a. Compute the firm's weighted average cost of capital.
 b. Is the figure computed in (a) is an appropriate acceptance criteria for evaluating new investment proposal?

[8+2]
 Ans: (a) 14.425% (b) Yes

Sol: Given.

$$\text{Weight of debt } (w_d) = \frac{6}{16} = 0.375$$

$$\text{Weight of preference stock } (w_p) = \frac{2}{16} = 0.125$$

$$\text{Weight of common stock } (w_c) = \frac{8}{16} = 0.5$$

$$\text{Interest rate before tax } (k_d) = 13\%$$

$$\text{Cost of preferred stock } (k_{ps}) = 8\%$$

$$\text{Price of common stock } (P_0) = \text{Rs. } 200$$

$$\text{Last Year Dividend } (D_0) = \text{Rs. } 20$$

$$\text{Growth Rate } (g) = 10\%$$

$$\text{Tax Rate } (T) = 40\% \text{ or } 0.40$$

@ Cost for WACC = $w_d \times k_{dt} + w_p \times k_{ps} + w_c \times k_e$

$$= 0.375 \times 7.8\% + 0.125 \times 8\% + 0.5 \times 21\%$$

$$= 14.425\% \text{ Ans/11}$$

Where,

$$\# \text{ Cost of Debt after tax } (k_{dt}) = k_d(1 - T)$$

$$= 13\% \cdot (1 - 0.40)$$

$$= 7.8\%$$

$$\Rightarrow \text{cost of preferred stock } (k_{ps}) = \frac{D_{ps}}{P_{ps}} = 8\%$$

$$\begin{aligned} \# \text{ cost of common stock } (k_R) &= \frac{D_1}{P_0} + g \\ &= \frac{D_0(1+g)}{P_0} + g \\ &= \frac{20(1+0.10)}{200} + 0.10 \\ &= 0.21 \text{ or } 21\% \end{aligned}$$

(b) The WACC is the minimum required rate of return for all investment. But these are high interest rate in debenture so, it required new capital for the investment, to evaluating for new investment proposal.

[$WACC > k_{dt}$; $WACC > k_{ps}$ and $WACC < k_e$]

6. 2076 Q.No. 15

Narayani Textile Company's expected dividend per share is Rs 30 and it is expected to grow at a constant rate of 5 percent. Current price per share is Rs 300. Its before-tax cost of debt is 11 percent, and its marginal tax rate is 40 percent. The stock sells at book value.

Asset	Amount	Liabilities and Equity	Amount
Cash	Rs 100,000	Long-term debt ✓	Rs 400,000
Accounts receivable	150,000	Equity ✓	600,000
Inventories	250,000		
Plant and equipment, Net	500,000		
Total assets	Rs 1,000,000	Total liabilities and equity	Rs 1,000,000

- Calculate the cost of each specific source of long-term financing.
- Calculate the company's after-tax weighted average cost of capital.
- Briefly describe the uses of weighted average cost of capital.

[4+3+3]

7. 2075 Q.No. 16 | 2064 Q.No. 5 | 2063 Q.No. 7

Ans: (a) 15% and 6% (b) 11.4%

Given,

Expected dividend per share (D_1) = Rs. 30

Expected growth Rate (g) = 5% or Rs. 0.05

Current price per share (P_0) = Rs. 300

Cost of Debt before tax (k_d) = 10%

Tax Rate (T) = 40% or Rs. 0.40

$$\begin{aligned} \text{①} \# \text{ cost of debt After tax } (k_{d_f}) &= k_d (1 - T) \\ &= 10\% (1 - 0.40) \\ &= 6\% \end{aligned}$$

$$\# \text{ cost of preferred stock } (k_{ps}) = \frac{D_{ps}}{NP} \times$$

$$\begin{aligned} \# \text{ cost of equity } (k_e) &= \frac{D_1}{P_0} + g \\ &= \frac{30}{300} + 0.05 \\ &= 0.15 \text{ or } 15\% \end{aligned}$$

⑥ cost of WACC = ?

$$\text{Weight of debt } (W_d) = \frac{4,00,000}{10,00,000} = 0.4$$

$$\text{Weight of equity } (W_e) = \frac{6,00,000}{10,00,000} = 0.6$$

Now, we know that,

$$\begin{aligned} \text{WACC} &= W_d \times k_d + W_e \times k_e \\ &= 0.4 \times 6\% + 0.6 \times 15\% \\ &= 11.4\% \text{ Ans} \end{aligned}$$

⑦ Uses of Weighted Average cost of Capital (WACC):

- Investment Decision making.
- Company's valuation
- Performance measurement
- Corporate strategy
- Risk management.

[4+3+3]

7. 2075 Q.No. 16 | 2064 Q.No. 5 | 2063 Q.No. 7

Ans: (a) 15% and 6% (b) 11.4%

The following table gives earnings per share figures for the Mega Trading Company during the preceding 5 years. The firm's common stock is now (1/1/2017) selling for Rs 70 per share, and the expected dividend at the end of the current year 2017 is 60 percent of the 2016 EPS. Because investors expect past trend to continue, g may be based on the earnings growth rate.

Year	2016	2015	2014	2013	2012
EPS	7.8	7.22	6.68	6.19	5.73

Current interest rate on new debt is 10 percent. The firm's marginal tax rate is 30 percent. Its capital structure, considered to be optimal, is as follows:

Debt	Rs 120 million
Common equity	Rs 180 million
Total liabilities and equity	Rs 300 million

a. Calculate company's after-tax cost of new debt and the cost of common equity assuming that new equity comes only from retained earnings.
 b. What is the company's weighted average cost of capital, again assuming that present capital structure is maintained?
 c. List out the important factors affecting the cost of capital.

8. 2074 Q.No. 7

[4+4+2]

Ans: (a) 7%; 14.71% (b) 11.63%

Lancaster Engineering Inc. (LEI)

Solⁿ = Given,

Common stock selling price (P_0) = Rs. 70

Expected dividend per share (D₁) = 60% of 7.8
 = Rs. 4.68

Calⁿ for growth Rate

$$EPS_{2016} = EPS_{2012} (1+g)^4$$

$$\therefore 7.8 = 5.73 (1+g)^4$$

$$\Rightarrow \frac{7.8}{5.73} = (1+g)^4$$

$$\Rightarrow 1.3613 = (1+g)^4$$

$$\therefore 1.3613^{\frac{1}{4}} = (1+g)^{\frac{4 \times 1}{4}}$$

$$\therefore 1.0802 = 1+g$$

$$\therefore 1.0802 - 1 = g$$

$$\therefore g = 0.0802 \quad \text{or} \quad 8.02\%$$

Cost of debt before tax (k_d) = 10%

Marginal Tax rate (T) = 30%

$$\text{Weight of debt (} k_d) = \frac{Rs. 120m}{Rs. 300m} = 0.40$$

$$\text{Weight of Common equity (} k_e) = \frac{Rs. 180m}{Rs. 300m} = 0.60$$

① Calcⁿ of cost of debt after tax (k_{dt}) = ?
Now,

$$\begin{aligned} k_{dt} &= k_d (1 - T) \\ &= 10\% (1 - 0.30) \\ &= 7\% \end{aligned}$$

$$\# \text{ Cost of Common Equity (} k_e) = \frac{D_1}{P_0} + g$$

$$= \frac{4.68}{70} + 0.0802$$

$$= 14.71\%$$

⑥ Now, Calc of WACC :

$$\begin{aligned} \text{WACC} &= W_d \times k_d + W_e \times k_e \\ &= 0.40 \times 7\% + 0.60 \times 14.71\% \\ &= 11.63\% \end{aligned}$$

∴ Hence, weighted average cost of capital is 11.63%. Ans

⑦ Important factors affecting cost of capital are following:

- General Economic condition
- marketable securities
- Tax rate
- Policy system
- Financial Risk management

Important factors affecting the cost of capital.

8. 2074 Q.No. 7 [4+4+2]

Lancaster Engineering Inc. (LEI) has 25% debt, 15% preferred stock and 60% equity in its capital structure, which it considers to be optimal: LEI's expected net income this year is Rs 34,285.72, its established dividend payout ratio is 30%, its corporate tax rate is 40%, and investors expect earnings and dividends to grow at a constant rate of 9% in the future. LEI paid a dividend of Rs 3.60 per share last year, and its stock currently sells at a price of Rs 54 per share. LEI can obtain new capital in the following ways:

- Preferred: New preferred stock with a dividend of Rs 11 can be sold to be public at a price of Rs 95 per share.
- Debt: Debt can be sold at an interest rate of 12 percent.

Ans: (a) 7%; 14.71% (b) 11.63%

Given.

$$\text{Weight of debt } (w_d) = 25\% \text{ or } 0.25$$

$$\text{Weight of preferred stock } (w_{ps}) = 15\% \text{ or } 0.15$$

$$\text{Weight of common equity } (w_e) = 60\% \text{ or } 0.60$$

$$\text{Corporate tax } (T) = 40\% \text{ or } 0.40$$

$$\text{growth rate } (g) = 9\% \text{ or } 0.09$$

$$\text{last year dividend } (D_0) = \text{Rs. } 3.60 \text{ per share}$$

$$\text{current selling price stock } (P_0) = \text{Rs. } 54$$

$$\text{Dividend per share for preferred stock } (D_{ps}) = \text{Rs. } 11$$

$$\text{New price / selling preferred stock price } (N_{ps}) = \text{Rs. } 95$$

$$\text{cost of debt before tax / deb interest } (k_d) = 12\%$$

$$\begin{aligned} \text{① cost of debt after tax } (k_{d1}) &= k_d (1 - T) \\ &= 12\% (1 - 0.40) \\ &= 7.2\% \end{aligned}$$

$$\# \text{ cost of preferred stock } (k_{ps}) = \frac{D_{ps}}{NP} = \frac{B.12}{4.95} = 11.57\%$$

$$\begin{aligned} \# \text{ cost of equity } (k_e) &= \frac{D_1}{P_0} + g \\ &= \frac{D_0(1+g)}{P_0} + g \\ &= \frac{2.3.60(1+0.09)}{54} + 0.09 \\ &= 16.27\% \end{aligned}$$

⑤ calⁿ of WACC:

$$\begin{aligned} WACC &= W_D \times k_D + W_{ps} \times k_{ps} + W_E \times k_E \\ &= 0.25 \times 7.2\% + 0.15 \times 11.58\% + 0.60 \times 16.27\% \\ &= 13.299\% \quad \text{Ans/1} \end{aligned}$$

Ans: (a) k_d 10% (assuming 10%), k_{ps} 11.53%, k_{cs} 11.72% (w) 12.2%

14. 2069 Q.No. 8b

Khukuri Distillery Firm has the following capital structure, which it considers to be optimal.

Debt	25%
Preferred stock	15%
Common stock	60%
Total capital	100%

The firm's tax rate is 40% and the investors expected earnings and dividends to grow at a constant rate of 8% in the future. The firm paid dividend of Rs 3.60 per share last year, and its stock currently sells at a price of Rs 110 per share. These terms would apply to new security offerings.

$$NP = P_0(L-F)$$

Common: New common stock would have a flotation cost of 5 percent.

Preferred: New preferred stock could be sold to the public at a price of Rs 100 with a dividend of 10 percent. Flotation cost is 5 percent.

Debt: Debt could be at an annual rate of 12 percent.

Required:

- Find the component cost of each source of financing.
- Calculate the WACC assuming common stock financing requirement are all met by retained earnings.

15. 2068 Q.No. 6b

Ans: (i) 7.2%; 11.53%; 11.72% and 12.2%

Given,

weight of Debt (w_d) = 25% or 0.25

weight of preferred stock (w_{ps}) = 15% or 0.15

weight of common stock (w_c) = 60% or 0.60

Tax Rate (T) = 40% or 0.40

growth rate (g) = 8% or 0.08

Last Year Dividend (D_0) = Rs. 3.60 per share

current selling price (P_0) = Rs 110 per share

flotation cost new common stock (f) = 5%

Dividend per share (DP_s) = $100 \times 10\%$
= Rs. 10

flotation cost (f) = 5%

cost of debt before tax (k_d) = 12%

(i) cost of capital:

$$\begin{aligned} \# \text{ cost of debt } (k_d) &= k_d (1 - T) \\ &= 12\% (1 - 0.40) \\ &= 7.2\% \end{aligned}$$

$$\begin{aligned} \# \text{ cost of preferred stock } (k_p) &= \frac{D_p}{NP} \\ &= \frac{10}{95} \\ &= 10.53\% \end{aligned}$$

where, when we have flotation cost then we have to calculate NP like this way.

$$\begin{aligned} NP &= \text{Price} (1 - \text{Flotation cost}) \\ &= \text{Rs. } 100 (1 - 0.05) \\ &= \text{Rs. } 95 \end{aligned}$$

cost of common equity

Internal / Retain Earning:

$$k_e = \frac{D_1}{P_0} + g$$

$$\begin{aligned} D_1 &= D_0 (1 + g) \\ &= \text{Rs. } 3.60 (1 + 0.08) \\ &= \text{Rs. } 3.89 \end{aligned}$$

External:

$$k_e = \frac{D_1}{P_0} + g$$

XIP बिना जमा floatation cost है
 NP मात्र change होए $NP = P_0(1 - F)$
 $= 110(1 - 0.05)$
 $= \text{RS. } 104.5$

Again,

$$k_r = \frac{D_1}{P_0} + g$$

$$= \frac{\text{Rs. } 3.89}{\text{Rs. } 110} + 0.08$$

$$= 11.54\%$$

$$k_e = \frac{D_1}{NP} + g$$

$$= \frac{\text{Rs. } 3.89}{\text{Rs. } 104.5} + 0.08$$

$$= 11.72\%$$

ii) Calcⁿ of WACC

we, know

$$WACC = k_d \times W_d + k_{ps} \times W_{ps} + k_r \times W_r$$

$$= 7.2\% \times 0.25 + 10.53\% \times 0.15 + 11.54\% \times 0.60$$

$$= 10.3035\% \text{ Ans 11}$$

Hence, weighted Average cost of capital is required 10.3035% for these business. Ans 11

Unit: 5 Financial Assets Valuation

A) Bond Valuation (10,5+2)

$$V_0 = ?$$

- value of bond today
- Present value of bond
- current value of bond
- Intrinsic value of bond

① # Perpetual Bond

↓
No any fixed year (n)

$$V_0 = \frac{I}{k_d}$$

② # Zero Coupon Bond

↓
No any interest

$$V_0 = \frac{M}{(1+k_d)^n}$$

③ # Regular Bond

→ Interest (I)

→ Par value / Face value / maturity value (M)

→ Coupon rate, interest paid by bond (c)

ie. coupon rate (c) = 10%

M = Rs. 1000

$$\text{Interest (I)} = c \times M$$

$\rightarrow k_d =$ market interest rate / Required rate of return / Going rate of return / Effective yield required.

$\rightarrow n =$ No. of year to maturity, maturity period.

In case, After 2 years, 3 years
No. of $n =$ Real Year - After Year

Regular Bond Formula:

$$V_0 = I \times PVIFA_{k_d\%, n \text{ yrs}} + M \times PVIF_{k_d\%, n \text{ yrs.}}$$

or,

$$= I \times \left[\frac{1 - \frac{1}{(1+k_d)^n}}{k_d} \right] + M \times \frac{1}{(1+k_d)^n}$$

\Rightarrow An question semi-Annually / Half Yearly / quarterly $\frac{2}{2}$ $\frac{2}{2}$,

$$\left. \begin{array}{l} n \times 2 \\ \frac{i}{2} \\ k_d/2 \end{array} \right\} \text{semi / Half}$$

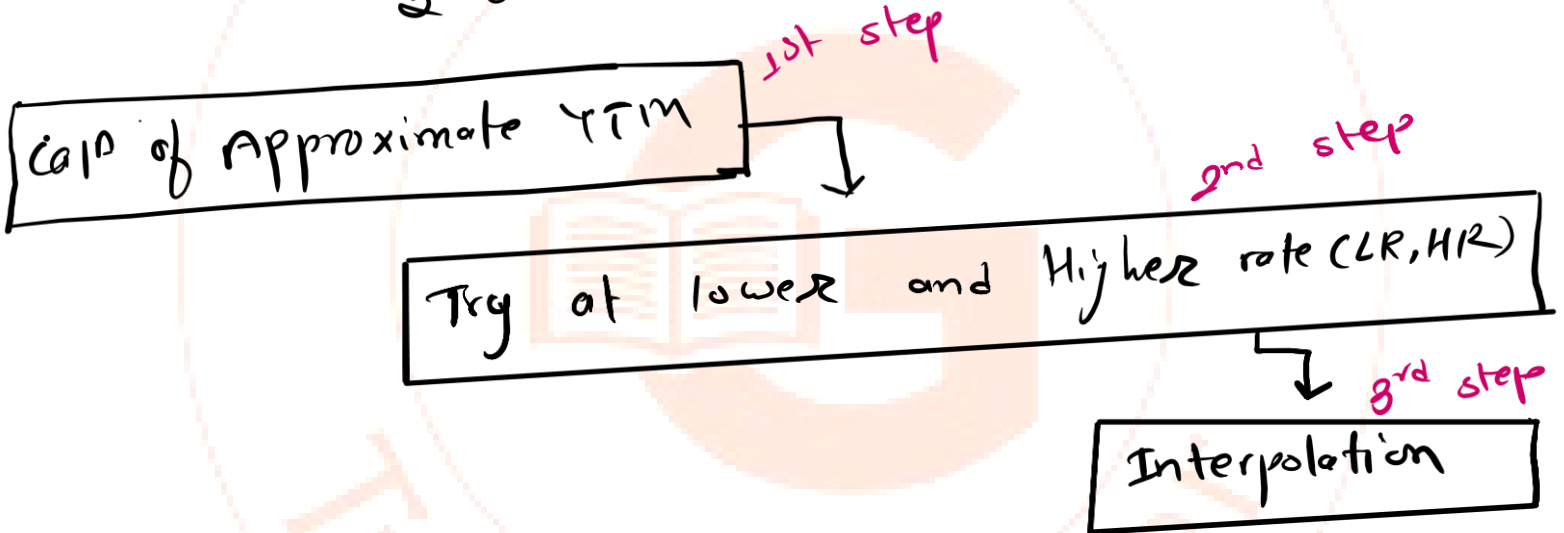
$$\left. \begin{array}{l} n \times 4 \\ \frac{i}{4} \\ k_d/4 \end{array} \right\} \text{quarterly}$$

current yield (c.y) = $\frac{I}{V_0}$

capital gain yield = YTM - current yield

For YTM [Yield to maturity]

3 steps



for 1st step

$$\text{Approximate YTM} = \frac{I + \frac{M - V_0}{n}}{\frac{M + 2V_0}{3}}$$

for 2nd step

Try at HR / LR

$$V_{LR/HR} = I \times PUIFA \downarrow \text{kd}^i, nY^s + M \times PUIFA \downarrow \text{kd}^i, nY^s \rightarrow LR/HR$$

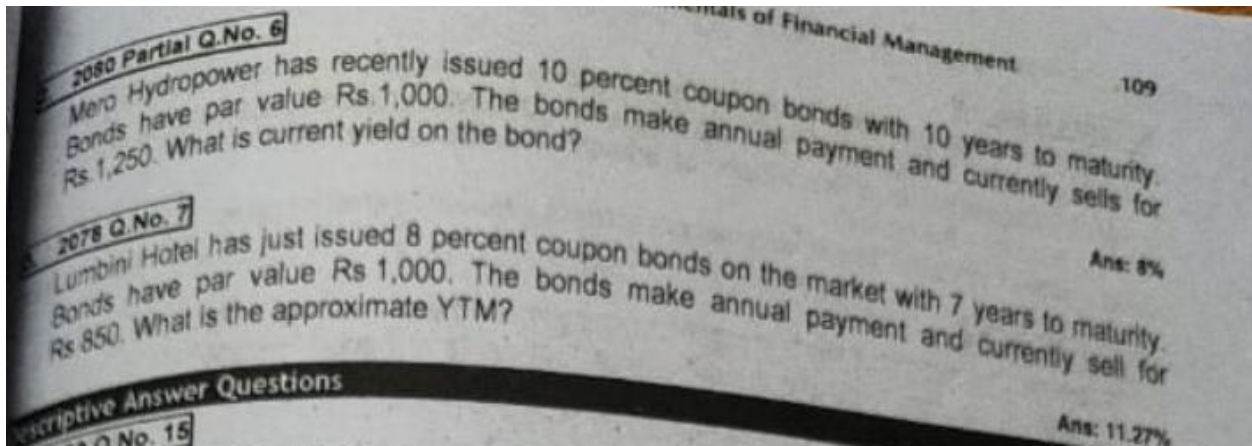
$\frac{C}{a}$ $\frac{C}{b}$ $\frac{C}{c}$ HR & LR =

for 3rd step

Interpolation:

$$LR + \frac{V_{LR} - V_0}{V_{LR} - V_{HR}} \times (HR - LR)$$

$\therefore V_0 = \text{price of bond II}$



2080

80/12

Coupon bond (C) = 10%

No. of Year (n) = 10 Years

Par value (M) = Rs. 1000

Current selling price (V_0) = Rs. 1250

Now,

Current yield on bond (C.Y) = $\frac{I}{V_0}$

where,

$$I = C \times M$$

$$= 10\% \times 1000$$

$$= \frac{10}{100} \times 1000$$

$$= \text{Rs. } 100$$

$$\frac{100}{1250}$$

$$= 0.08 \approx 8\%$$

2078 8012

$$C = 8\%$$

$$M = \text{Rs. } 1000$$

$$I = C \times M = \frac{8 \times 1000}{100} = \text{Rs. } 80$$

No. of year (n) = 7 Year

$$V_0 = \text{Rs. } 850$$

Now,

We know that;

Approximate YTM =

$$\frac{I + \frac{M - V_0}{n}}{\frac{M + 2V_0}{3}}$$

$$= \frac{80 + \frac{1000 - 850}{7}}{\frac{1000 + 2 \times 850}{3}}$$

$$= \frac{101.43}{900}$$

$$= 0.1127 \text{ or } 11.27\% \quad \text{Ans}$$

2080 Q.No. 15
 Suppose Bagmati Textile Company sold an issue of bonds with a 10-year maturity, a Rs 1,000 par value, a 10 percent coupon rate, and annual interest payments.
 a. If the investors required rate of return on such bonds is 12 percent. At what price would the bonds sell?
 b. If actual price is Rs 900, calculate yield to maturity. \rightarrow YTM \leftarrow

2078 Q.No. 14b
 City Bank sold an issue of bonds with a 10-year maturity, a Rs 1,000 par value, a 10 percent coupon rate, and annual interest payments.
 a. If the investors required rate of return on such bonds is 12 percent. At what price would the bonds sell?
 b. If actual price is Rs 900, calculate yield to maturity.

Ans: 11.27% [10 marks]
 Ans: (a) Rs 887.02 (b) 11.75% [4+6]

Given,

No. of maturity period (n) = 10 years

Par value (M) = Rs 1,000

Coupon Rate (c) = 10%

Interest Amount (I) = C x M

$$= \frac{10}{100} \times 1000$$

$$= 10.100$$

o) Required rate of return (kd) = 12%
 Price bond sell (V0) = ?
 Now,

$$V_0 = I \times PVIFA_{kd, n, ys} + M \times PVIF_{kd, n, ys}$$

$$= 100 \times PVIFA_{12\%, 10, ys} + 1000 \times PVIF_{12\%, 10, ys}$$

$$= 100 \times 5.6502 + 1000 \times 0.3220$$

$$= \text{Rs. } 887.02$$

\therefore Hence, value of bond selling is Rs. 887.02

⑥ Actual price (V0) = Rs. 900
 Calc for YTM:

1st step:

$$\text{Approximate YTM} = \frac{I + \frac{M - V_0}{n}}{\frac{M + 2V_0}{3}}$$

$$= \frac{100 + \frac{1000 - 900}{10}}{\frac{1000 + 2 \times 900}{3}}$$

$$= \frac{110}{983.33}$$

$$= 0.1179$$

$$= 11.79\%$$

2nd step:

Try at lower 11% = kd 11%

$$V_{LR} = I \times PVIFA_{kd, n, ys} + M \times PVIF_{kd, n, ys}$$

$$= 100 \times PVIFA_{11\%, 10, ys} + 1000 \times PVIF_{11\%, 10, ys}$$

$$= 100 \times 5.8892 + 1000 \times 0.3522$$

$$= \text{Rs. } 941$$

Try at Higher 12% = kd 12%

$$V_{HR} = I \times PVIFA_{kd, n, ys} + M \times PVIF_{kd, n, ys}$$

$$= 100 \times PVIFA_{12\%, 10, ys} + 1000 \times PVIF_{12\%, 10, ys}$$

$$= 100 \times 5.6502 + 1000 \times 0.3220$$

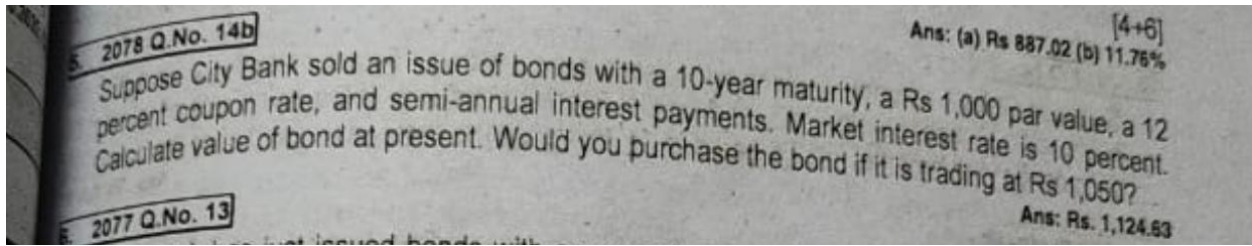
$$= \text{Rs. } 887$$

3rd step:

$$\text{Interpolation} = LR + \frac{V_{LR} - V_0}{V_{LR} - V_{HR}} \times (HR - LR)\%$$

$$= 11\% + \frac{941 - 900}{941 - 887} \times (12 - 11)\%$$

$$= 11.74\% \quad A=11$$



Solⁿ: Given,

No. of maturity period (n) = 10 yrs

Par value (M) = Rs. 1000

Coupon rate (C) = 12%

$$\begin{aligned} \text{Interest Amount (I)} &= C \times M \\ &= \frac{12}{100} \times 1000 \\ &= \text{Rs. } 120 \end{aligned}$$

If question is $\frac{n}{2}$ half-yearly, semi-yearly, quarterly

$$n \times 2, \frac{i}{2}, \frac{k}{2} \quad | \quad n \times 4, \frac{i}{4}, \frac{k}{4}$$

Market interest rate (k_d) = 10%

Now, calcⁿ of value of bond at present (V_0) = ?

$$V_0 = \frac{I}{2} \times PVIFA_{k_d, \frac{i}{2}, n \times 2} + M \times PVIF_{k_d, \frac{i}{2}, n \times 2}$$

$$= \frac{120}{2} \times PVIFA_{10\%, \frac{10}{2}, 10 \times 2} + 1000 \times PVIF_{10\%, \frac{10}{2}, 10 \times 2}$$

$$= 60 \times PVIFA_{5\%, 20} + 1000 \times PVIF_{5\%, 20}$$

$$= 60 \times 12.4622 + 1000 \times 0.3769$$

$$= \text{Rs. } 1,124.63$$

\therefore If the bond is trading at Rs. 1050. We would purchase bond because it has lower price than present value of bond. That is undervalued as it's currently trading...

7. 2076 Q.No. 14a

A company has Rs 1,000 par value, 14% coupon payment bond outstanding that has 15 years remaining until maturity. If investor's required rate of return is 12% what should be the price of bond today?

Ans: Rs 902.67

[5]

Ans: Rs 1,136.23

- a) same as 2078 π semi Annually \overline{m} \overline{m}
- b) If the market interest rate increases, the value of bond decreases. vice versa. [Market \uparrow Value bond \downarrow]

Tuition Center

B. 2075 Q.No. 14

Ans: Rs 1,136.23

- Suppose High-Tech Manufacturing Company sold an issue of bonds with a 10-year maturity, Rs 1,000 par value, a 10 percent coupon rate, and annual interest payments.
- Two years after the bonds were issued, the going rate of interest on bonds such as these fell to 8 percent. At what price would the bonds sell?
 - Suppose that, 2 years after the initial offering, the going interest rate had risen to 12 percent. At what price would the bonds sell?
 - Suppose that the conditions in part (a) existed that is, interest rates fall to 8 percent 2 years after the issue date. Suppose further that the interest rate remained at 8 percent for the next 10 years. Describe what would happen to the price of the company's bonds over time.

[4+4+2]

Ans: (a) Rs 1,114.96 (b) Rs 900.66

SolⁿNo. of year to maturity (n) = 10 yrsPar value (M) = Rs. 1000 per shareCoupon Rate (c) = 10%Interest Amount (I) = $C \times M$
= 10% of 1000
= Rs. 100① Two year After: Real Year (n) = 10 - 2 = 8 yrsGoing interest rate (k_d) = 8%value of bond / price (V_0) = ?

Now,

We know,

$$\begin{aligned}
 V_0 &= I \times PVIFA_{k_d, n} + M \times PVIF_{k_d, n} \\
 &= 100 \times PVIFA_{8\%, 8} + 1000 \times PVIF_{8\%, 8} \\
 &= 100 \times 5.7466 + 1000 \times 0.5403 \\
 &= 1114.96
 \end{aligned}$$

∴ The bond would sell at Rs. 1,114.96 //

b) $n = 8$ yrs

$k_d = 12\%$

$$\begin{aligned} V_0 &= I \times PVIFA_{k_d\%, n \text{ yrs}} + M \times PVIF_{k_d\%, n \text{ yrs}} \\ &= 100 \times PVIFA_{12\%, 8 \text{ yrs}} + 1000 \times PVIF_{12\%, 8 \text{ yrs}} \\ &= 100 \times 4.9676 + 1000 \times 0.4039 \\ &= \text{Rs. } 900.66 \end{aligned}$$

∴ The value of bond would sell of Rs. 900.66 //

© The price of bond would decline, if maturity period decline. And price also affected by interest rate, so, price of bond decrease over the Company.

Home work : 2073, 2072, 2071 → Try
2074,

$$V_0 = I \times \left[\frac{1 - \frac{1}{(1 + \frac{k_d}{2})^{n \times 2}}}{k_d/2} \right] + M \times \frac{1}{(1 + \frac{k_d}{2})^{n \times 2}}$$

(5) (5)

(5) (5)

13. 2070 Q.No. 6

The Annapurna Company has two issues of bond outstanding. Bond A has 7% coupon rate, maturity of 5 years, and effective yield required on bond A is 12%. Bond B has 9 percent coupon rate, a maturity period of 10 years, and effective yield required on bond is 14%. Face value of both bonds is Rs 1,000 and interest is paid annually.

Required:

- What is the value of each bond?
- If the effective rate increases by 1 percentage point, what is the value of each bond?
- Why the value of the bonds change due to the increase in effective yield rate?

Ans: (a) V_0 Rs 819.736 and Rs 739.149 (b) V_0 Rs 789.004 and Rs 696.892

Bond A

$$C = 7\%$$

$$n = 5 \text{ yrs}$$

$$k_d = 12\%$$

$$M = 1000$$

$$I = 8.75$$

a) $V_0 = ?$

D

b) If effective rate increases by 1%.

$$V_0 = ?$$

$$k_d = 13\%$$

same

c) Due to the interest rate affected.

Bond B

$$C = 9\%$$

$$n = 10 \text{ yrs}$$

$$k_d = 14\%$$

$$M = 1000$$

$$I = 90$$

$$V_0 = ?$$

$$V_0 = ?$$

$$k_d = 15\%$$

same

14. 2069 Q.No. 6

Bagmati Textile Company's bond has an 8% coupon rate and Rs 10,000 face value. Interest is paid semi annually, and the bond has 10 years of maturity. Currently bond is selling at Rs 9,200.

Required:

- What is the bond's semi-annual YTM? $\textcircled{10}$
- What is the bond's annual YTM? $10 \times 2 = \textcircled{20} \%$
- What is the effective YTM?

Given.

$$C = 8\% \quad (\text{semi-annually})$$

$$M = \text{Rs } 10,000$$

$$n = 10 \text{ yrs}$$

$$V_0 = \text{Rs } 9,200$$

$$I = \frac{8\%}{100} \times 10,000 = 800$$

\textcircled{b} semi YTM $\times 2$

\textcircled{c} Effective YTM

$$\left(1 + \text{semi annual YTM}\right)^m - 1$$

\textcircled{a} Semi-annually YTM

YTM = 3 step

1st step

$$\text{Approximate YTM} = \left[\frac{\frac{I}{2} + \frac{M - V_0}{n \times 2}}{\frac{M + 2V_0}{3}} \right] = 4.65\%$$

2nd step

check HR, LR

$$V_{HR} | LR \quad k_d = 5\% \quad k = 4\%$$

3rd step

$$\text{Interpolation} = LR + \frac{V_{LR} - V_0}{V_{LR} - V_{HR}} \times (HR - LR)$$

= ?

k_s = Required interest rate, required rate of return, going interest rate.

S. 14.9

$$\begin{aligned} D_1 &= D_0(1+g) \\ D_2 &= D_1(1+g) \\ D_3 &= D_2(1+g) \\ &\vdots \\ D_{10} &= D_9(1+g) \end{aligned}$$

यादि $\frac{D_1}{D_0}$ आणि $\frac{D_2}{D_1}$ यांचे गुणोत्तर $1+g$ असेल तर $D_{10} = \dots$

$$\begin{aligned} D_{51} &= D_0(1+g)^{51} \\ D_{100} &= D_0(1+g)^{100} \end{aligned}$$

Super Normal growth $\frac{D_3}{D_2}$ जाईल Price निकालायला येईल
 म्हणजे i.e. P_1 or P_2 निकालायला येईल म्हणजे,
 v.v.r

$$P_1 = \frac{D_2}{(1+k_s)^1} + \frac{D_3}{(1+k_s)^2} + \frac{P_3}{(1+k_s)^3} \quad [\text{Formula}]$$

$$P_2 = \frac{D_3}{(1+k_s)^1} + \frac{P_3}{(1+k_s)^2}$$

1. 2074 Q.No. 7

What is the value of a share of stock of Gama Company to an investor who requires a 16 percent rate of return if Gama's expected dividend (D_1) is Rs 20? Assume earnings and dividends are expected to grow at a compound annual rate of 6 percent.

[2]

Ans: Rs 200

2075 Q.No. 15

Ans: Rs 275

Alpha Company recently paid a dividend of Rs 30. Dividend is expected to grow at a constant rate of 5 percent per year forever. The firm's cost of equity is 15 percent.

- Calculate the intrinsic value of stock.
- What is dividend yield for the first year?
- Calculate value of the stock at the end of the third year, P_3 .

[5+3+2]

Ans: (a) Rs 315 (b) 10% (c) Rs 364.65

Given,

Recently paid dividend (D_0) = Rs. 30Growth Rate (g) = 5% α 0.05Required Rate of return (k_s) = 15% α 0.15

(a) The intrinsic value of stock $P_0 = ?$
Now,

We know that:

$$P_0 = \frac{D_1}{k_s - g}$$

$$= \frac{D_0 (1+g)}{k_s - g}$$

$$= \frac{30(1+0.05)}{0.15 - 0.05}$$

$$= \text{Rs. } 315$$

\therefore Hence, Alpha Company intrinsic value of stock is Rs. 315.

$$\begin{aligned}
 \text{(b) Dividend Yield (D.Y)} &= \frac{D_1}{P_0} \\
 &= \frac{D_0(1+g)}{P_0} \\
 &= \frac{31.50}{315} \\
 &= 0.10 \text{ or } 10\%
 \end{aligned}$$

© value of stock at the end of third year $P_3 = ?$
 Now,

$$\begin{aligned}
 P_3 &= P_0(1+g)^3 \\
 &= 315(1+0.05)^3 \\
 &= \text{Rs. } 364.65
 \end{aligned}$$

2074 Q.No. 6

Mills Cosmetics Co.'s stock recently paid a Rs 2 dividend. This dividend is expected to grow by 25 percent for the next 3 years, and then grow forever at a constant rate, g . The current stock price is, Rs 58.88. At what constant rate is the stock expected to grow following year if required rate of return is 12%?

Ans: (a) Rs 315 (b) 10% (c) Rs 364.65

[10]

Ans: g 6.25%

→ Solⁿ

Recently paid Dividend (D_0) = Rs. 2

growth rate for 1 year (g_1) = 25%

" " 2 year (g_2) = 25%

" " 3 year (g_3) = 25%

Current stock price (P_0) = Rs. 58.88

Required rate of return (k_s) = 12%

Now,

$$P_0 = \frac{D_1}{(1+k_s)^1} + \frac{D_2}{(1+k_s)^2} + \frac{D_3}{(1+k_s)^3} + \frac{P_3}{(1+k_s)^3}$$

$$\text{or, } 58.88 = \frac{2.5}{(1+0.12)^1} + \frac{3.125}{(1.12)^2} + \frac{3.9063}{(1.12)^3} + \frac{P_3}{(1.12)^3}$$

$$\text{or, } 58.88 = 2.23 + 2.49 + 2.78 + \frac{P_3}{1.40}$$

$$\text{or, } 58.88 = 7.50 + \frac{P_3}{1.40}$$

$$\text{or, } 58.88 - 7.50 = \frac{P_3}{1.40}$$

$$\text{or, } \frac{51.38}{1} = \frac{P_3}{1.40}$$

$$\text{or, } 72.18 = P_3$$

$$\therefore \text{Price of third year } P_3 = \text{Rs. } 72.18$$

$$P_3 = \frac{D_4}{k_s - g}$$

$$\text{or, } 72.18 = \frac{3.9063(1+g)}{(0.12 - g)}$$

$$\text{or, } 8.66 - 72.18g = 3.9063 + 3.9063g$$

$$\text{or, } 8.66 - 3.9063 = 3.9063g + 72.18g$$

$$\text{or, } 4.76 = 76.09g$$

$$\text{or, } \frac{4.76}{76.09} = g$$

$$\therefore \text{constant growth Rate } (g) = 0.0626 \text{ or } 6.25\%$$

$$D_1 = D_0(1+g) = 2(1+0.25) = \text{Rs. } 2.5$$

$$D_2 = D_1(1+g) = 2.5(1+0.25) = \text{Rs. } 3.125$$

$$D_3 = D_2(1+g) = 3.125(1+0.25) = \text{Rs. } 3.9063$$

$$D_4 = D_3(1+g) = 3.9063(1+g)$$

9. 2073 Q.No. 15

Suppose SS Company has issued two types of securities - bond and common stock. The bond has 10-year maturity, a Rs 1,000 par value, a 10 percent coupon rate. Interest is paid annually. Its common stock recently paid a dividend, D_0 of Rs 20. It expects to have constant growth of 5 percent per year for ever.

- If market interest rate is 12 percent calculate value of the bond.
- If shareholder's required rate is 15 percent, what should be the value of stock?

Ans: (a) Rs 887.02; (b) Rs 218

Home work

14. 2069 Q.No. 5

ABC Company is experiencing a period of rapid growth. Earnings and dividends expected to grow at a rate of 15% for the next two years. Last year's dividend was Rs 10 and required rate of return on stock is 12%.

- Calculate the expected price at the end of year 2.
- Calculate the value of stock today and at the end of year 1.

Ans: (a) Rs 110.2083 (b) Rs 108.6682 and Rs 110.2083

Note: It is assumed that there is zero growth rate after 2 years

15. 2067 Q.No. 8b

Chapte

Home work

Home work ,,

Chapter – 8: Basis of Capital Budgeting-15 Marks

→ fix

Group = C

There are two types of Basis of Capital Budgeting

- ① Equal cash flow | Even cash flow
- ② Unequal cash flow | Uneven cash flow

Example: Amount ₹ Deposit starts equal
 cash flow ₹ 10,00,000 | 1st year 5,00,000 2nd year 5,00,000

Formula:

$$\text{① Pay back period (PBP)} = \frac{\text{Initial investment}}{\text{Annual cash flow}} \dots \text{Yrs.}$$

[Equal cash flow]

$$\text{② Pay back period (PBP)} = \text{minimum Year} + \frac{\text{Amount to be recovered}}{\text{Next Year cash flow}}$$

[uneven cash flow]

③ Net present value (NPV) for equal cash flow:

Year	C.F	PVIFA i%	PV
0	NCO	1	PVIFA i% x C.F
1-2	Annual C.F	-	-
			NPV = xxx

$$NPV = \text{Annual cash flow} \times [PVIFA i\%, n \text{ yrs}] - \text{NCO}$$

④ Net present value for unequal cash flow:

Year	Cash flow c.f (initial investment)	$PVIF i\%$	$PV = c.f \times PVIF i\%$
0	(xxx)	1	(xxx)
1	xxx	xxx	xxx
2	xxx	xxx	xxx
3	xxx	xxx	xxx
4	xxx	xxx	xxx
			<hr/> NPV = xxxxxx

⑤ IRR (Internal Rate of Return) for equal cash flow:

इसका लक्ष्य निम्नलिखित step को पढ़ें।

step 1: Factor := $PBIP = \frac{\text{Initial investment}}{\text{Annual cash flow}}$... yrs. 2.5 yrs

step 2: Referring to the PVIFA table the factor 2.5 lies between in 4 years 35% and 36%, which corresponding factors 2.5405 and 2.4946.

step 3: Interpolation.

$$IRR = LR\% + \frac{LR_{\text{factor}} - \text{Factor}}{LR_{\text{factor}} - HR_{\text{factor}}} \times (HR - LR)\%$$

#IRR for unequal cash flow: → [5 steps]

step 1: Fake Annuity = $\frac{\text{Total cash flow}}{\text{No. of years}}$

step 2: Fake factor = $\frac{\text{Initial investment}}{\text{Fake Annuity}}$... 7% 2.5 yrs is

step 3: Preferring to the PVIFA table, the factor 2.5 lies between in 4 years 35% and 36% in respectively.

step 4: Calc of NPV → + or -

Year	C.F	PVIFA %	PV	PVIFA %	PV
0	(20,000)	-	(20,000)	1	(20,000)
1	-	-	xx	xxx	xx
2	-	-	xx	xx	xx
3	-	-	xx	xxx	xxx
4	-	-	xx	xxx	xxx
			<u>NPV = xxx</u>		<u>NPV = -xxx</u>

step 5: Interpolation

$$\text{IRR} = \text{LR} \% + \frac{\text{NPV}_{\text{LR}}}{\text{NPV}_{\text{LR}} - \text{NPV}_{\text{HR}}} \times (\text{HR} - \text{LR}) \%$$

Analytical Answer Questions

3. 2080 Q.No. 19

Lumbini Furniture (Pvt) Ltd. is considering these two projects: Project X and Project Y. Each project has a cost of Rs 20,000,000, and the cost of capital for each project is 15 percent. The expected net cash flows are as follows:

Year	Expected Net Cash Flows (in thousand)	
	Project X	Project Y
0	(Rs. 20,000)	(Rs. 20,000)
1	8,000	12,000
2	8,000	7,000
3	8,000	5,000
4	8,000	4,000

- Calculate each project's payback period, net present value, and internal rate of return.
- Which project or projects should be accepted if they are independent?
- Which project should be accepted if they are mutually exclusive?
- How might a change in the cost of capital produce a conflict between the NPV and IRR ranking of these two projects? Would this conflict exist if cost of capital were 5 percent?

Ans: (a) $PBP_X = 2.5$ years; $PBP_Y = 2.2$ years; $NPV_X = Rs\ 2,840$; $NPV_Y = Rs\ 1,303$; $IRR_X = 21.86\%$; $IRR_Y = 19.02\%$ (d)
 $NPV_X = Rs\ 8,368$; $NPV_Y = Rs\ 5,388$

4. 2079 Q.No. 19

Solⁿ Given.

(a) Pay back period (PBP) for equal cash flow:

$$PBP_X = \frac{\text{Initial investment}}{\text{Annual cash flow}}$$

$$= \frac{20,000}{8,000}$$

$$= 2.5 \text{ Year}$$

Payback period for uneven Cash flow:

$$PBP_Y = \text{minimum year} + \frac{\text{Amount to be recovered}}{\text{Next year cash flow}}$$

Year	c.f	Cumulative c.f
0	(20,000)	(20,000)
1	12,000	(8,000)
2	7,000	(1,000)
3	5,000	4,000
4	4,000	8,000

$$PBP_y = 2 + \frac{1000}{5,000}$$

$$= 2.2 \text{ Year}$$

Net present value for equal Cash flow:

$$NPV_x = \text{Annual c.f} \times [PVIFA_{i\%, n \text{ Yrs}}] - \text{Initial investment}$$

$$= 8,000 \times [PVIFA_{15\%, 4 \text{ Yrs}}] - 20,000$$

$$= 8,000 \times 2.8550 - 20,000$$

$$= \text{Rs. } 2840 \text{ in '000}$$

Net present value for uneven Cash flow:

NPV_T = ?

Year	c.f	PVIF (15%)	PV = c.f × PVIF (15%)
0	(20,000)	1	(20,000)
1	12,000	0.8696	10,435
2	7,000	0.7561	5,293
3	5,000	0.6575	3,288
4	4,000	0.5718	2,287
			<u>NPV = 1,303</u>

← .5
→ .5

Internal Rate of Return (IRR) for project X

Step 1: Factor = PBP = 2.5

Step 2: Referring to the PVIFA table, the factor 2.5 lies between the 4-year 21% and 22% rates, corresponding to factors of 2.5404 and 2.4936.

Step 3: Interpolation

$$\text{IRR} = \text{LR}\% + \frac{\text{LR factor} - \text{Factor}}{\text{LR factor} - \text{HR factor}} \times (\text{HR} - \text{LR})\%$$

$$= 21\% + \frac{2.5404 - 2.5}{2.5404 - 2.4936} \times (22 - 21)$$

$$= 21.86\%$$

$$\text{IRR} = \text{LR}\% + \frac{\text{LR factor} - \text{factor}}{\text{LR factor} - \text{HR factor}} (\text{HR} - \text{LR})\%$$

equation

IRR for project Y unequal cash flow

Step 1: Fake Annuity = $12000 + 7000 + 5000 + 4000 / 4$
 $= 7000$

Step 2: Fake factor = Initial investment / fake annuity
 $= 20,000 / 7000 = 2.8571$

Step 3: Referring to the PVIFA table, the factor 2.8571 lies between 15% and 16%

Step 4: Calculation of NPV

Year	C.F	PVIF _{20%}	PV
0	-20,000	1	-20,000
1	12,000	0.8333	10,000
2	7,000	0.6944	4861
3	5,000	0.5787	2894
4	4,000	0.4823	1929
			NPV = -316

15% → 1303
 20% → -316

Step 5: Interpolation

$$\text{IRR} = (LR)^{\circ} + \frac{NPV_{LR}}{NPV_{LR} - NPV_{HR}} (HR - LR)^{\circ}$$

$$= 15\% + \frac{1303}{1303 + 316} (20 - 15)\%$$

$$= 19.02\%$$

(b) Which project or projects should be accepted if they are independent?

If projects X and Y are **independent**, we accept **all projects** with:

- **Positive NPV** ✓
- **IRR greater than the cost of capital** ✓

Given:

- **NPV_x = Rs 2,840, IRR_x = 21.86%** X
- **NPV_y = Rs 1,303, IRR_y = 19.02%** X

✓ Both have **positive NPVs** and **IRRs greater than typical cost of capital (e.g., 10%)**.

👉 **Answer (b):**

Both Project X and Project Y should be accepted if they are independent.

(c) Which project should be accepted if they are mutually exclusive?

If projects are **mutually exclusive**, we can choose only **one**. In this case, we accept the one with:

- **Higher NPV** (primary decision rule)
- IRR is considered **only** if NPVs are equal or similar

Given:

- **NPV_x = Rs 2,840**
- **NPV_y = Rs 1,303**

👉 **Answer (c):**

Project X should be accepted if the projects are mutually exclusive, because it has the higher NPV.

② NPV ~~विशाल~~ PUIFA 5%, PUIF 5%
 X Y

For project X [equal]

$$\begin{aligned}
 NPV_X &= \text{Annual c/f} [PUIFA i\%, n \text{ yrs}] - I\text{CO} \\
 &= \text{Rs. } 8,000 [PUIFA 5\%, 4 \text{ yrs}] - 20,000 \\
 &= 8,000 \times 3.5460 - 20,000 \\
 &= \text{Rs. } 8368
 \end{aligned}$$

For project Y [unequal]

NPV_Y

Year	c/f	PUIF 5%	PV
0	-20,000	1	-20,000
1	12,000	0.9524	11,429
2	7,000	0.9070	6,349
3	5,000	0.8638	4,319
4	4,000	0.8227	3,219
			<u>3,219</u>
			NPV = 5,316

Hence, conflict does not exist between NPV of two project X and Y. because NPV are positive.

4. 2079 Q.No. 19

Generation X Ltd. has identified the following two mutually exclusive projects:

Year	Cash Flow (A)	Cash Flow B
0	(Rs. 100,000)	(Rs. 100,000)
1	35,000	45,000
2	35,000	30,000
3	35,000	40,000
4	35,000	10,000

a. What is the internal rate of return for each of these projects? If you apply the IRR decision rule, which project should the company accept? Is this decision necessarily correct?
 b. If the required return is 11 percent, what is the NPV for each of these projects? Which project will you choose if you apply the NPV decision rule?
 c. If there were a conflict between IRR and NPV decision rules, how would you choose the project?
 d. Why the projects become mutually exclusive? [6+6+2+1]

Ans: (a) IRR_A = 14.96%; IRR_B = 11.40% (b) NPV_A = Rs 8,584; NPV_B = Rs 724 (c) NPV method

⑥ Calc of IRR for equal cash flow: (A)

step 1: Factor $x = \frac{\text{Initial investment}}{\text{Annual c.f}} = \frac{1,00,000}{35,000} = 2.8571$

step 2: Referring to the PVIFA table, the factor 2.8571 lies in 4 year between 14% and 15%, which corresponding 2.9131 and 2.8550

step 3: Interpolation:

$$\begin{aligned} \text{IRR} &= LR\% + \frac{LR_{\text{factor}} - \text{factor}}{LR_{\text{factor}} - HR_{\text{factor}}} \times (HR - LR)\% \\ &= 14\% + \frac{2.9131 - 2.8571}{2.9131 - 2.8550} \times (15 - 14)\% \\ &= 14.96\% \end{aligned}$$

calc of IRR for cash flow B [uneven cash flow]

$$\text{step 1: Fake Annuity} = \frac{\text{Total cf}}{\text{No. of years}} = \frac{1,25,000}{4} = 31,250$$

$$\text{step 2: Fake factor} = \frac{\text{Initial investment}}{\text{Fake Annuity}} = \frac{1,00,000}{31,250} = 3.200$$

step 3: preferring to the PVIFA table, the factor 3.2 lies in 4 years between 9% and 10%.

step 4: calc of NPV \leftarrow $PV = CF \times PVIF$

Year	cf	PVIF _{10%}	PV	PVIF _{12%}	PV
0	(100,000)	1	-1,00,000	1	-1,00,000
1	45,000	0.9091	40,909	0.8929	40,181
2	30,000	0.8264	24,792	0.7972	23,916
3	40,000	0.7513	30,052	0.7118	28,472
4	10,000	0.6830	6,830	0.6355	6,355
			NPV = 2583		
				NPV = -1076	

step 5: Interpolation

$$IRR = LR\% + \frac{NPV_{LR}}{NPV_{LR} - NPV_{HR}} \times (HR - LR)\%$$

$$= 10\% + \frac{2583}{2583 + 1076} \times (12 - 10)\%$$

$$= 11.45\%$$

If we Apply IRR decision rule, the Company should accepted project A because it has higher IRR than project B. This decision is not necessarily correct because IRR method is not superior than NPV.

⑥ Calcⁿ of NPV for both project

For project A

$$\begin{aligned}
 NPV_A &= \text{Annual c.f} \times PVIFA_{11\%, 4 \text{ yrs}} - \text{Initial investment} \\
 &= 35,000 \times PVIFA_{11\%, 4 \text{ yrs}} - 1,00,000 \\
 &= 35,000 \times 3.1024 - 10,000 \\
 &= \text{Rs. } 8,584
 \end{aligned}$$

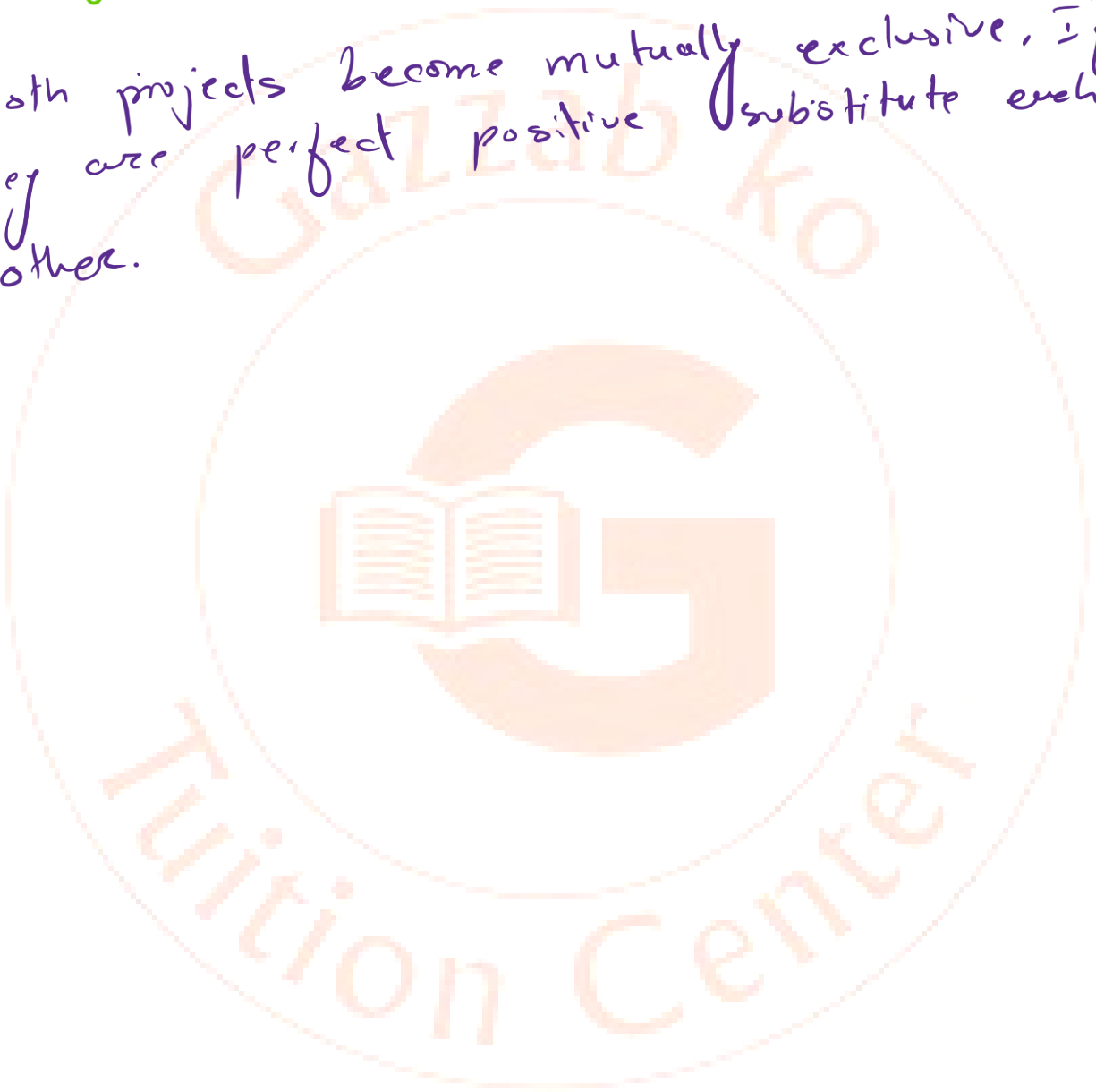
For project B

Year	c.f	PVIF _{11%}	PV
0	(100,000)	1	(1,00,000)
1	45,000	0.9009	40,541
2	30,000	0.8116	24,348
3	40,000	0.7312	29,248
4	10,000	0.6587	6,587
			NPV = Rs. 724

∴ If we Apply NPV decision rule, the Company should accept project A because it has higher NPV than the project B.

© In this project of A and B, both NPV and IRR method gives positive ranking of the project. However, if the IRR and NPV decision rule, finally we recommend according to the NPV method is more superior than IRR.

ⓓ Both projects become mutually exclusive, if they are perfect positive substitute each other.



... and projects become mutually exclusive? [6+6+2+1]
 Ans: (a) $IRR_A = 14.96\%$; $IRR_B = 11.40\%$ (b) $NPV_A = Rs\ 8,584$; $NPV_B = Rs\ 724$ (c) NPV method

5. 2078 Q.No. 19

Lumbini Transportation (Pvt.) Ltd. is considering to run micro bus service from Butwal to Pokhara. A deluxe bus costs Rs. 2,000,000 and it will run the bus service for 5 years to come. Annual net cash inflows for five years will be as follows:

Year	1	2	3	4	5
Cash flows (Rs.)	600,000	800,000	800,000	600,000	500,000

a. What is the payback period of the project? Should Lumbini Transportation (Pvt.) Ltd. run the bus service from Butwal to Pokhara if its maximum cost recovery period is 3 years?
 b. If the required rate of return of the project is 10 percent, what is the NPV of the project? Should Lumbini Transportation (Pvt.) Ltd. run the bus service?
 c. Calculate internal rate of return (IRR) of each project. Should the company run the bus service?
 d. Which method of evaluating the project is superior? Why?

[3+5+5+2]
 Ans: (a) 2.75 years (b) Rs. 527,870 (c) 20.22%

Soln

(a) Payback period for unequal cash flow

$$PBP = \text{minimum Year} + \frac{\text{Amount to be recovered}}{\text{Next Year cash flow}}$$

Year	cf	(cumulative cf)
0	(20,00,000)	(20,00,000)
1	6,00,000	(14,00,000)
2	8,00,000	(6,00,000)
3	8,00,000	2,00,000
4	6,00,000	8,00,000
5	5,00,000	13,00,000

According to the question

$$= 2 + \frac{6,00,000}{8,50,000}$$

$$= 2.75 \text{ years.}$$

Yes, Lumbini transportation Pvt Ltd should run the bus service from pokhara to Butwal. Since it has maximum recovery time 3 years but it recovered less than 3 years. i.e. 2.75 years.

⑥ Calcⁿ of NPV for unequal cash flow:

Year	C. f	PVIF _{10%}	PV
0	(20,00,000)	1	(20,00,000)
1	6,00,000	0.9091	5,45,460
2	8,00,000	0.8264	6,61,120
3	8,00,000	0.7513	6,01,040
4	6,00,000	0.6830	4,09,800
5	5,00,000	0.6209	3,10,450
			NPV = Rs.
			5,27,870

Decision:

Yes, Umbini Transportation Pvt. Ltd should run tourist bus services. Since NPV of this project is positive.

③ calⁿ of IRR for unequal cash flow:

$$1^{st} : \text{Fake Annuity} = \frac{33,00,000}{5} = \text{Rs. } 6,60,000$$

$$2^{nd} : \text{Fake factors} = \frac{20,00,000}{6,60,000} = 3.0303$$

3rd : preferring to PVIFA table, the fake factors 3.0303 lies between in a 5 years 19% and 20%.

4th : calⁿ of NPV \rightarrow +
 \rightarrow -

Year	C.F	PVIFA 19%	PV	PVIFA 20%	PV
0	(20,00,000)	1	(20,00,000)	1	(20,00,000)
1	6,00,000	0.8403	5,04,180	0.8264	4,95,840
2	8,00,000	0.7062	5,64,960	0.6830	5,46,400
3	8,00,000	0.5934	4,74,720	0.5645	4,51,600
4	6,00,000	0.4987	2,99,220	0.4165	2,79,900
5	5,00,000	0.4190	2,09,500	0.3855	1,92,750
		NPV =	52,580		NPV = (33,510)

5th: Interpolation

$$IRR = LR\% + \frac{NPV_{LR}}{NPV_{LR} - NPV_{HR}} (HR - LR)\%$$

$$= 19\% + \frac{52,580}{52,580 + 33,510} (21 - 19)\%$$

$$= 20.22\%$$

∴ Yes, Lumbini Transportation Pvt Ltd should run the bus services, since its required rate of return is less than IRR of project.

① NPV method of evaluating the project is superior, because it shows the real value of company.

Homework

2077

2074

MGT 215: Fundamentals of Financial Management 111

2077 Q.No. 19
Happy Travel Tours Ltd. is considering to run tourist bus from Sauraha to Kathmandu. A tourist bus costs Rs 1,000,000 and it will ply daily for 4 years to come. Annual net cash inflows for four years will be as follows:

Year	Cash flows
1	
2	Rs 400,000
3	400,000
4	600,000
	500,000

Assume the required rate of return of the project is 12 percent.

- Define payback period. What is the payback period of the project? Should the company run tourist bus from Sauraha to Kathmandu if its maximum cost recovery period is 3 years?
- Define net present value (NPV). Calculate the NPV of the project. Should the company run tourist bus service?
- Define IRR. What is the IRR of the project? Should the company run tourist bus service? [4+5+6]

Ans: (a) 2.333 years; (b) NPV Rs 420,870; (c) IRR 29.58%

2076 Q.No. 19
Consider the following two mutually exclusive projects:

Year	Cash Flows	
	Project M (Rs 10,000)	Project N (Rs 10,000)
0		
1	5,000	0
2	5,000	0
3	5,000	0
4	5,000	30,000

- Calculate payback period of each project.
- Calculate net present value of each project. Which project (s) would you accept?
- Calculate internal rate of return of each project? Which would you prefer?
- Calculate the profitability index of each project.
- Do IRR and NPV methods give conflicting result? Which project would you select if NPV and IRR methods give conflicting results? Why? [3+3+3+3]

Ans: (a) PBP_M 2 years; PBP_N 3.33 years (b) NPV_M Rs 5,850; NPV_N Rs 10,490; Project N (c) IRR_M 34.90%; IRR_N 31.61%; Project M (d) PI_M 2.049

$$IRR = ? \quad 14$$

$$CF_0 = \frac{CF_t}{(1 + IRR)^t}$$

① ^{0.5} payback period for equal cash flow project M

$$PBP = \frac{\text{Initial investment}}{\text{Annual cash flow}} = \frac{10,000}{5,000} = 2 \text{ Year}$$

payback period for unequal cash flow project N

$$PBP = \text{minimum Year} + \frac{\text{Aml. to be recovered}}{\text{Next year cash flow}}$$

$$= 3 + \frac{10,000}{30,000}$$

$$= 3.33 \text{ Years}$$

Year	C.f	Cumulative C.f
0	(10,000)	(10,000)
1	0	(10,000)
2	0	(10,000)
3	0	(10,000)
4	30,000	20,000

⑥ calc: of NPV for project m equal cash flows:

$$[NPV_m = \text{Annual cash flow} \times \text{PVIFA}_{10\%, n \text{ yrs}} - \text{Initial investment}]$$

$$= 5,000 \times \text{PVIFA}_{10\%, 4 \text{ yrs}} - 10,000$$

$$= 5,000 \times 3.1699 - 10,000$$

$$= \text{Rs. } 5850$$

Net present value for project N

Year	C.f	PVIFA _{10%}	PV
0	(10,000)	1	(10,000)
1	0	0.9901	0
2	0	0.8264	0
3	0	0.7513	0
4	30,000	0.6830	20,490
			<u>20,490</u>
			NPV = Rs. 10,490

Based on the NPV decision, project N should be accepted because it has higher NPV value than the project M.

② Calc of IRR for project M:

1st step: Factor = $\frac{\text{Initial investment}}{\text{Annual cash flow}} = \frac{10,000}{5,000} = 2$

2nd step: referring to the PVIFA table, the factor 2 lies between in 4 years are 34% and 35% which corresponding factors 2.0290 and 1.9969.

3rd step: Interpolation

$$\begin{aligned} \text{IRR} &= \text{LR}\% + \frac{\text{LR factor} - \text{Factor}}{\text{LR factor} - \text{HR factor}} \times (\text{HR} - \text{LR})\% \\ &= 34\% + \frac{2.0290 - 2}{2.0290 - 1.9969} \times (35 - 34)\% \\ &= 34.90\% \end{aligned}$$

IRR for project N unequal cash flow

$$C_0 = \frac{C_4}{(1 + \text{IRR})^4}$$

$$\text{or, } \frac{10,000}{1} = \frac{30,000}{(1 + \text{IRR})^4}$$

$$\text{or } 10,000 (1 + \text{IRR})^4 = 30,000$$

$$m (1 + IRR)^4 = \frac{30,000}{10,000}$$

$$m (1 + IRR)^4 = 3$$

$$m (1 + IRR)^{4 \times \frac{1}{4}} = 3^{\frac{1}{4}}$$

$$m (1 + IRR) = 1.32$$

$$m IRR = 1.32 - 1$$

$$m IRR = 0.32$$

$$m IRR = 32\%$$

Hence, on the basis of IRR decision, we accept project M because its IRR is higher than that the project N.

② # Profitability index for project M [equal cash flow]

$$PI_M = \frac{\text{Total PV}}{\text{Initial cost}} = \frac{15,850}{10,000} = 1.585$$

Profitability index for project N [unequal c.f.]

$$PI_N = \frac{\text{Total PV}}{\text{Initial cost}} = \frac{20,490}{10,000} = 2.049$$

② According to the IRR and NPV gives conflict result. If we to select NPV and IRR on these project, we would select higher NPV result project. Because NPV is superior than that the IRR decision methods. So, NPV gives actual value of the company.

Ans: (a) PBP= 2 years; PBP= 3.33 years (b) NPV= 1,506,380 (c) IRR= 20.59%

31.51%; Project M. (b) P= 1.506; P= 2.048

B. 2075 Q.No. 19

Narayani Transportation (Pvt.) Ltd. is considering to run tourist bus from Chitwan to Kathmandu. A tourist bus costs Rs 5,000,000 and it will ply daily for 5 years to come. Annual net cash inflows for five years will be as follows:

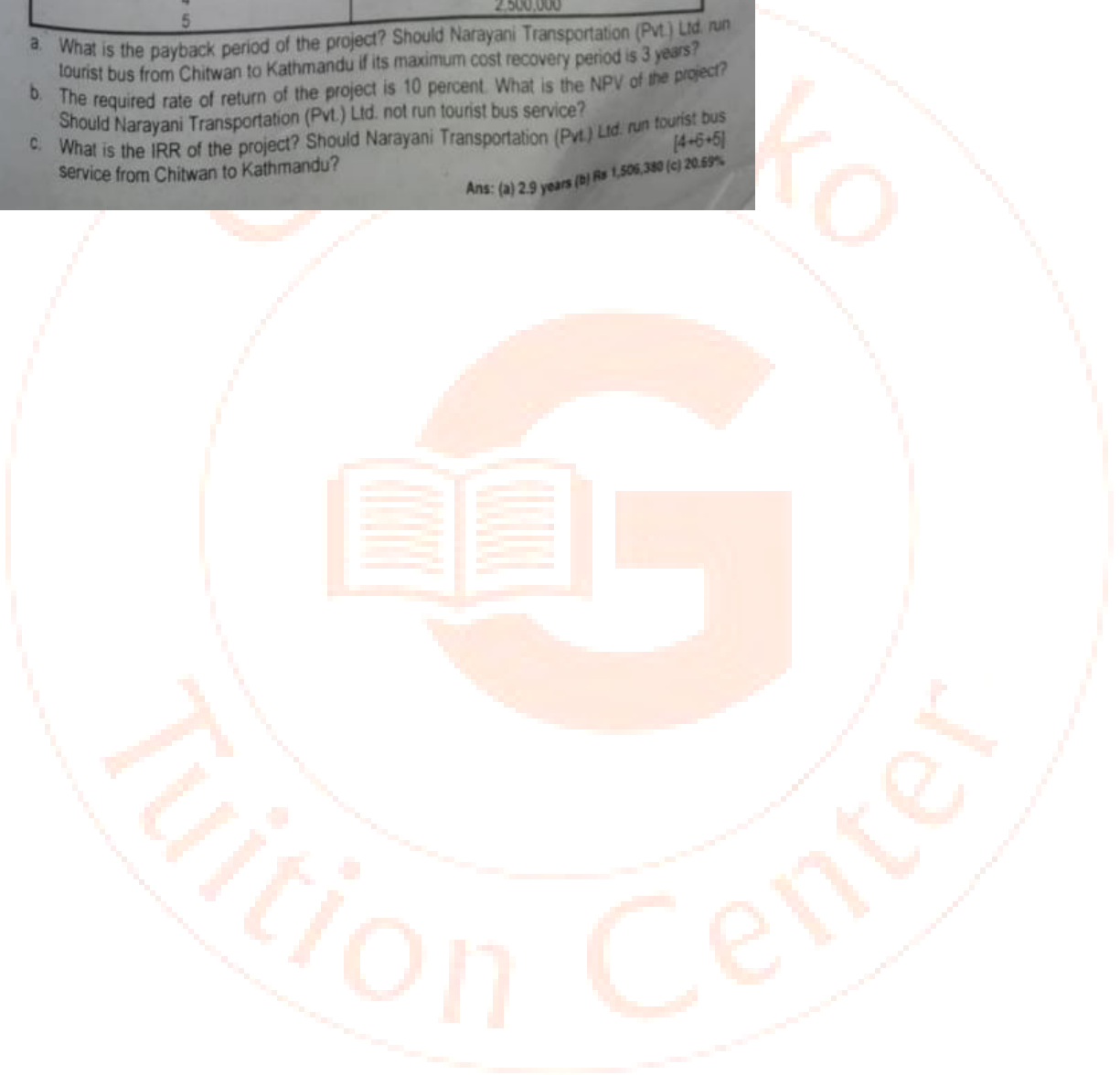
Year	Cash Flows (Rs 5,000,000)
0	1,500,000
1	1,700,000
2	2,000,000
3	1,000,000
4	2,500,000
5	

a. What is the payback period of the project? Should Narayani Transportation (Pvt.) Ltd. run tourist bus from Chitwan to Kathmandu if its maximum cost recovery period is 3 years?

b. The required rate of return of the project is 10 percent. What is the NPV of the project? Should Narayani Transportation (Pvt.) Ltd. not run tourist bus service?

c. What is the IRR of the project? Should Narayani Transportation (Pvt.) Ltd. run tourist bus service from Chitwan to Kathmandu? [4+6+5]

Ans: (a) 2.9 years (b) Rs 1,506,380 (c) 20.59%



Unit 7 : Capital Structure and Leverage 2+10Marks

Formula:

① Degree of operating leverage (DOL):

$$\# DOL = \frac{CM}{EBIT} \text{ or, } \frac{\text{Sales} - \text{variable cost}}{\text{Sales} - V.C - F.C} \text{ or, } \frac{Q(S-v)}{Q(S-v) - F.C} \text{ or, } \frac{\text{Increase in EBIT}}{\text{Increase in sales}}$$

② Degree of financial leverage (DFL)

$$\# DFL = \frac{EBIT}{EBT} \text{ or, } \frac{EBIT}{EBT - \frac{Pd}{1-t}} \text{ or, } \frac{Q(S-v) - F.C}{Q(S-v) - F.C - I} \text{ or, } \frac{\text{Inc. in Net income}}{\text{Inc. in EBIT}}$$

③ Degree of Total leverage (DTL)

$$\# DTL = DOL \times DFL \text{ or, } \frac{\text{Inc. in Net income}}{\text{Inc. in sales}}$$

④ Earning per share (EPS) = $\frac{(EBIT - I)(1-T) - Pd}{\text{No. of share outstanding}}$

⑤ Indifference point Analysis:

$$EPS_{\text{project A}} = EPS_{\text{project B}}$$

⑥ cash break even point =

$$\frac{FC - Dep^2}{SPPU - VCPU}$$

⑦ operating BEP in unit = $\frac{FC}{SPPU - VCPU}$

⑧ Financial BEP (EBIT) = $I + \frac{Pd}{(1-T)}$

$$\therefore EBIT = \text{Sales}(1 - V/S) - FC$$

where, $V/S = \text{variable cost per unit}$

Direct Answer Questions

1. 2080 Q.No. 8

A firm has DOL of 2 times and DFL of 3 times. Its net income is Rs 200,000. What is its degree of total leverage? If sales increases by 10 percent, what will be its new net income?

Ans: Rs 64,000

Solⁿ

Given,

$$DOL = 2 \text{ times}$$

$$DFL = 3 \text{ times}$$

$$\text{Net income} = \text{Rs } 200,000$$

$$\text{Degree of total leverage (DTL)} = ?$$

Now,

$$\begin{aligned} DTL &= DOL \times DFL \\ &= 2 \times 3 \\ &= \underline{6} \text{ times} \end{aligned}$$

If sales increased by 10%. Effect on NI = ?
 $[10\% \times 6 \text{ times}] = \underline{60\%}$

Again,

$$\begin{aligned} \text{New Net income} &= \text{Net income} \times (1 + 0.60) \\ &= 2,00,000 (1.60) \\ &= \text{Rs } 3,20,000 \end{aligned}$$

2. 2079 Q.No. 8

The Everest Trading Company has operating profit of Rs. 40,000, interest expenses of Rs. 6,000 and preferred dividend of Rs. 8,000. If it pays taxes at the rate of 25 percent, what is its financial BEP?

[2]

Ans: Rs 16,667

Solⁿ

Given,

Operating profit = Rs. 40,000

Interest Expenses = Rs. 6,000

Preferred Dividend = Rs. 8,000

Tax Rate (T) = 25% or 0.25

Financial BEP = ?

We know that, Now, the financial BEP is:

$$\frac{I + PD}{1 - T}$$

$$= 6,000 + \frac{8,000}{1 - 0.25}$$

$$= \text{Rs. } 16,667 \quad \text{Ans}$$

3. 2078 Q.No. 8

A firm has DOL of 1.5 times and DFL of 2 times. Its net income is Rs 40,000. What is its degree of total leverage? If sales increases by 10 percent, what will be its new net income?

Ans: 3 times; Rs. 52,000

Same 3 ✖

5. 2075 Q.No. 6

A firm has DOL of 2 times and DFL of 2.5 times. Its EBIT is currently Rs 20,000 and net income is Rs 9,000. What is its degree of total leverage? If sales increase by 10 percent, what will be its new net income?

Ans: 5 times and Rs 13,500

Homework

Solⁿ

Given,

$$DOL = 2 \text{ time}$$

$$DFL = 2.5 \text{ times}$$

$$EBIT = \text{Rs. } 20,000$$

$$\text{Net income} = \text{Rs. } 9,000$$

$$DTL = ?$$

If sales increase by 10%

New Net income = ?

Now,

we know that

$$\begin{aligned} DTL &= DOL \times DFL \\ &= 2 \times 2.5 \\ &= 5 \text{ times} \end{aligned}$$

If sales increased by 10%, it occurred
 $5 \times 10\% = 50\%$

$$\begin{aligned} \text{New Net income} &= \text{old Net income} (1 + 0.50) \\ &= 9,000 (1.50) \\ &= \text{Rs. } 13,500 \text{ Ans} \end{aligned}$$

6. 2079 Q.No. 16

Lumbini Sugar Mills has degree of operating leverage (DOL) of 2 at its current production and sales level of 10,000 units. The resulting operating income figure is Rs. 1,000.

- If sales are expected to increase by 20 percent from the current 10,000 units sales position, what would be the resulting operating profit figures?
- At the company's new sales position of 12,000 units, what is the firm's new DOL figure?

Ans: (a) Rs 1,400; (b) 1.71 times

Solⁿ Given,

Degree of operating leverage (DOL) = 2 times

Sales level = 10,000 units

Operating income (EBIT) = Rs. 1,000

- (a) If sales are expected to increase by 20% from current 10,000 sales level
 New operating profit = ? [If increased = 20% × 2 = 40%]
 Now,

$$\begin{aligned} \text{New operating Income (New EBIT)} &= \text{Old EBIT} (1 + 0.40) \\ &= 1000 (1.40) \\ &= \text{Rs. } 1400 \quad \text{Ans} \end{aligned}$$

(b) New DOL = ?

$$\text{Old DOL} = \frac{\text{CM}}{\text{EBIT}}$$

$$\text{or, } 2 = \frac{\text{CM}}{1000}$$

$$\therefore \text{CM} = \text{Rs. } 2000$$

For New CM if sales increased by 20%, that sales
 Position = 12,000 unit.

$$\begin{aligned} \text{New CM} &= \text{Old CM} (1 + 0.2) \\ &= 2000 (1.2) \\ &= \text{Rs. } 2400 \end{aligned}$$

$$= \frac{2400}{1400}$$

$$= 1.71 \text{ times} \quad \text{Ans}$$

$$\text{New DOL} = \frac{\text{New CM}}{\text{New EBIT}}$$

7. 2077 Q.No. 16b

Kathmandu Gift Center produces and sells dolls. Each unit is sold for Rs 80. The fixed costs are Rs 300,000. Variable costs are Rs 50 per unit.

- How many units must be sold to achieve the break even point?
- What is the degree of operating leverage at sales of 15,000 units?

Ans: (a) BEP 10,000 units; (b) DOL 3 times

Solⁿ Given,

Selling price per unit (S) = Rs. 80

Fixed cost (F.C) = Rs. 3,00,000

Variable cost (V.C) = Rs. 50 per unit

① Operating Breakeven point:

$$\text{BEP} = \frac{\text{FC}}{\text{S} - \text{V.C}} = \frac{3,00,000}{80 - 50} = 10,000 \text{ units}$$

② Degree of operating leverage (DOL) at 15,000 unit sales.

$$\text{DOL} = \frac{Q(S - V)}{Q(S - V) - \text{FC}} = \frac{15,000(80 - 50)}{15,000 \times 30 - 3,00,000} = \frac{4,50,000}{1,50,000} = 3 \text{ times Ans}$$

8. 2076 Q.No. 16

Company A and Company B both sell their products at Rs 8 per unit. However, variable cost per unit for Company A is Rs 4.8 and that for Company B is Rs 4. The fixed operating cost for Company A is Rs 80,000 and for company B is Rs 120,000.

- What is the break even point for Company A? Company B?
- Which company should have higher degree of operating leverage? Explain.
- At what sales level in units do both companies earn the same level of operating profit? [6+2+2]

Ans: (a) 25,000 units and 30,000 units (c) 50,000 units

Fixed operating cost is a constant

Sol: Given,

Selling price per unit (SP/PU) = Rs. 8 per unit Company A & B

Variable cost per unit Company A (V_A) = Rs. 4.8

Variable cost per unit company B (V_B) = Rs. 4

Total fixed cost for Company A = Rs. 80,000

Total fixed cost for company B = Rs. 120,000

a)

Break even point

$$\begin{aligned} \text{BEP in A} &= \frac{FC}{S - V} \\ &= \frac{80,000}{8 - 4.8} \\ &= 25,000 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{BEP in B} &= \frac{FC}{S - V} \\ &= \frac{120,000}{8 - 4} \\ &= 30,000 \text{ units} \end{aligned}$$

b) The firm B has higher level of fixed operating cost, so that it must have higher degree of operating leverage than the Company A.

c) Required sales level for equal profit:

$$= \frac{\text{Difference in}}{\text{Difference cmPU}} = \frac{120,000^B - 80,000^A}{(8 - 4)^B - (8 - 4.8)^A} = \frac{40,000}{0.8} = 50,000 \text{ units}$$

Ans

9. 2074 Q.No. 16

Your company is planning to market mineral water in Pokhara. The marketing department has suggested that it could be sold at Rs 30 per bottle. It is estimated that the annual fixed operating costs, including Rs 200,000 depreciation, will be Rs 1,000,000 and the variable costs per bottle will be Rs 10.

- What is the operating break even point?
- What minimum number of bottles should the company must sell to attain cash break even point?
- What should be the sales volume to achieve after tax profit of Rs 150,000? Assume 25 percent corporate tax rate.
- Calculate and interpret the operating leverage at sales volume of 80,000 bottles. [3+2+2+3]

Ans: (a) 50,000 bottles (b) 40,000 bottles (c) 60,000 bottles (d) 2.67 times

Solⁿ Given,

Selling price per unit (SPPU) = Rs. 30 per unit

Annual fixed cost (F.C) = Rs. 10,00,000

Annual Depreciation (Depⁿ) = Rs. 2,00,000

Variable cost per unit (VCPU) = Rs. 10 per unit

① Operating Break-even point (BEP) = ?

We know that

$$\begin{aligned} \text{Operating BEP} &= \frac{F.C}{SPPU - VCPU} \\ &= \frac{Rs. 10,00,000}{Rs. 30 - Rs. 10} \\ &= 50,000 \text{ Bottle.} \end{aligned}$$

② The cash Break-Even point:

$$\begin{aligned} \text{Cash BEP} &= \frac{FC - Dep^n}{SPPU - VCPU} \\ &= \frac{Rs. 10,00,000 - Rs. 2,00,000}{Rs. 30 - Rs. 10} \\ &= 40,000 \text{ Bottle.} \end{aligned}$$

⑥ $EBIT_1 = 14 \cdot 150,000$
 Tax rate $(T) = 25\%$ or 0.25

Now, $EBIT_1 = EBIT_2$

$$EBIT(1-T) = [Q(S-v) - FC](1-T)$$

or $150,000$

or $150,000 = (20Q - 10,00,000) \cdot 0.75$

or $150,000 + 750,000 = 15Q$

or, $9,00,000 = 15Q$

$$\therefore Q = \frac{9,00,000}{15}$$

\therefore quantity for required sales = 60,000 bottle

⑦ Calcⁿ of operating leverage:
 when $Q = 80,000$ bottle

$$DOL = \frac{Q(S-v)}{Q(S-v) - FC}$$

$$= \frac{80,000(30-10)}{80,000(30-10) - 10,00,000}$$

$$= 2.67 \text{ times.}$$

\therefore degree of operating leverage 2.67 times implies that one percent change in sales that result 2.67% change in EBIT in the same direction.

$$\frac{10,00,000 + \frac{150,000}{1-0.25}}{30-10}$$

$$= 60,000 \text{ bottle}$$

MGT 215: Fundamentals of Financial Management 105

10. 2073 Q.No. 12b
 Star company produces and sells dolls. Each unit is sold for Rs 50; the fixed costs are Rs 200,000 for 25,000 units or less; variable costs are 60 percent of selling price. What is the degree of operating leverage at sales of 15,000 units? Interpret the value of the degree of operation leverage you calculated.

11. 2070 Q.No. 4 [3+2]

Solⁿ Given.

Selling price per unit (SPPU) = Rs. 50

Fixed cost (F.C) = Rs. 2,00,000

Variable cost per unit (VCPU) = 50×0.60
 = Rs. 30

The degree of operating leverage at sales 15,000 units

$$DOL = \frac{Q(S-V)}{Q(S-V)-FC} = \frac{15,000(50-30)}{15,000(50-30)-2,00,000}$$

$$= 3 \text{ times}$$

So, DOL of 3 times implies that if sales changed by $\pm 1\%$, then EBIT changed by 3 times same direction.

11. 2070 Q.No. 4 [3+2]
 Ans: 3 times

Everest Batteries Manufacturing Company has a degree of operating leverage (DOL) of 2 times at its current production and sales level of 50,000 units of batteries. The resulting operating income figure is Rs 20,000.

a. If sales are expected to increase by 20 percent from the current 50,000 unit sales position, what would be the resulting operating profit figure?

b. At the company's new sales position of 60,000 units, what is the company's new DOL? Also interpret the results.

12. 2069 Q.No. 7 [10]
 Ans: (a) Rs 28,000 (b) 1.7143 times

Solⁿ

Given,

$$\text{DOL} = 2 \text{ times}$$

sales level = 50,000 unit of batteries

$$\text{operating income} = \text{Rs. } 20,000$$

$$\begin{aligned} \text{(a) New EBIT} &= \text{old EBIT} (1 + \% \text{ change sales}) \\ &= 20,000 (1 + 0.40) \\ &= \text{Rs. } 28,000 \end{aligned}$$

where, If sales increased by $20\% \times 2 = 40\%$.

$$\text{(b) New DOL} = ?$$

$$\text{New DOL} = \frac{\text{New CM}}{\text{New EBIT}}$$

$$= \frac{48,000}{28,000}$$

$$= 1.71 \text{ times} \quad \text{Ans}$$

$$\text{DOL} = \frac{\text{CM}}{\text{EBIT}}$$

$$2 = \frac{\text{CM}}{20,000}$$

$$\text{old CM} = 40,000$$

$$\text{New CM} = 40,000 \times (1 + 0.20)$$

$$= 40,000 \times 1.20$$

$$= \text{Rs. } 48,000$$

Unit 2: Financial Statement Analysis -2/10+15

List of formula

$$1) \text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current liability}}$$

Where,

$$\text{Current Asset} = \text{Cash} + \text{Bank} + \text{A/c receivable} + \text{Debtors} + \text{Marketable securities} + \text{Inventories} + \text{prepaid exp}^n$$

$$\text{Current liability} = \text{creditors} + \text{Bank overdraft} + \text{Bill's payable} + \text{Outstanding / due exp}^n + \text{Advance income}$$

$$2) \text{Quick Ratio} = \frac{\text{Quick Assets or liquid asset, Acid test}}{\text{Current liability}}$$

Where,

$$\text{Quick Asset} = \text{Current Asset} - \text{prepaid exp}^n - \text{Inventories}$$

$$3) \text{Inventory turnover ratio (ITOR)} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\frac{\text{Cost of goods sold}}{\text{Ending inventory}} \approx \frac{\text{Sales}}{\text{Closing inventory}}$$

Where,

$$\text{Cost of goods sold} = \text{Sales} - \text{Gross profit}$$

$$\text{Average inventory} = \frac{\text{opening inventory} + \text{closing inventory}}{2}$$

$$\textcircled{4} \text{ Receivable turnover ratio (RTOR)} = \frac{\text{Annual credit sales}}{\text{Average Amount receivable}}$$

$$\text{or, } \frac{\text{Annual credit sales}}{\text{Receivable}} \quad \text{or, } \frac{\text{Sales}}{\text{Receivable}}$$

$$\textcircled{5} \text{ Days sales outstanding (DSO)} = \frac{\text{Days in a year} \times \text{Receivable}}{\text{Sales}}$$

$$\text{or } \frac{\text{Day in a Year}}{\text{RTOR}}$$

$$\textcircled{6} \text{ Fixed Assets turnover ratio (FATOR)} = \frac{\text{Sales}}{\text{Net Fixed Asset}}$$

where, Net fixed Asset = Gross fixed Asset - Depreciation

$$\textcircled{7} \text{ total Asset turnover ratio (TATOR)} = \frac{\text{Sales}}{\text{Total Asset}}$$

$$\textcircled{8} \text{ Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

$$\textcircled{9} \text{ Debt Equity Ratio (DER)} = \frac{\text{Total Debt}}{\text{shareholder equity}}$$

Where,

Total debt = long term debt + current liabilities

shareholder equity = Common stock + Additional paid in capital + Retained Earning

$$(10) \text{ Long-Term Debt to Asset ratio} = \frac{\text{Long Term debt}}{\text{Total Assets}}$$

$$(11) \text{ Equity multiplier (EM)} = \frac{\text{Total Assets}}{\text{Total equity}} \text{ or } 1 + D/E$$

$$(12) \text{ TIE} = \frac{\text{EBIT}}{\text{Interest}}$$

$$(13) \text{ Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales}} \times 100\%$$

$$(14) \text{ Net profit margin} = \frac{\text{Net profit}}{\text{Sales}} \times 100\%$$

$$(15) \text{ Return on Asset (ROA)} = \frac{\text{Net income}}{\text{Total Asset}} \times 100\%$$

$$(16) \text{ Return on equity (ROE)} = \frac{\text{Net income}}{\text{Common equity}} \times 100\%$$

$$(17) \text{ EPS} = \frac{\text{NPAT}}{\text{No. of shares O/S}} \text{ or } \frac{\text{NPAT} - P_2}{\text{NOS}}$$

$$(18) \text{ Price earning Ratio (PIE) ratio} = \frac{\text{MPS}}{\text{EPS}}$$

$$(19) \text{ Market to book ratio} = \frac{\text{Market price per share}}{\text{Book value per share}}$$

$$(20) \text{ ROA} = \text{PM} \times \text{TATOR} \text{ or } \frac{\text{NI}}{\text{Sales}} \times \frac{\text{Sales}}{\text{T.A}}$$

$$(21) \text{ ROE} = \text{PM} \times \text{TATOR} \times \text{EM} \text{ or } \frac{\text{NI}}{\text{Sales}} \times \frac{\text{Sales}}{\text{T.A}} \times \frac{\text{T.A}}{\text{total equity}}$$

ROA \times EM

Descriptive Answer Questions
 1. 2080 Q.No. 13b
 Himal Transport Company has current assets of Rs. 2,000,000 and current liabilities of Rs. 1,000,000. What effect would the following transactions have on the firm's current ratio?
 a. Two new trucks are purchased for a total of Rs 800,000 in cash.
 b. The company borrows Rs 500,000 on short-term basis to carry an increase in receivables of the same amount.
 c. Additional common stock of Rs 1,000,000 is sold and the proceeds invested in the expansion of several terminals. [4]
 Ans: (a) 1.2 times (b) 1.67 times (c) 2 times

Q. No. 13b
 Given,

Current Asset = Rs. 20,00,000

Current liabilities = Rs. 10,00,000

$$\# \text{ Current Ratio} = \frac{\text{Current Asset}}{\text{Current liability}} = \frac{20,00,000}{10,00,000} = 2 \text{ times}$$

① Two new trucks are purchased at total cash of Rs. 8,00,000

$$\# \text{ current Ratio} = \frac{\text{Current Asset} - \text{Two truck}}{\text{current liabilities}}$$

$$= \frac{20,00,000 - 8,00,000}{10,00,000} = 1.2 \text{ times}$$

② If company borrow of Rs. 500,000 on short-term basis.

$$\therefore \text{current Asset} = \text{Rs. } 20,00,000 + \text{Rs. } 5,00,000^{\text{cash}} = \text{Rs. } 25,00,000$$

$$\therefore \text{current liability} = \text{Rs. } 10,00,000 + \text{Rs. } 5,00,000 = \text{Rs. } 15,00,000$$

$$\# \text{ current Ratio} = \frac{\text{Rs. } 25,00,000}{\text{Rs. } 15,00,000} = 1.67 \text{ times}$$

③ Additional Common Stock of Rs. 1,00,000 is sold:

$$\# \text{ current Ratio} = \frac{\text{Current Assets}}{\text{Current liability}}$$

Common stock doesnot affect in current Assets & Current liabilities.

$$= \frac{\text{Rs. } 20,00,000}{\text{Rs. } 10,00,000}$$

$$= 2 \text{ times Ans 11}$$

2. 2079 Q.No. 12

The following data apply to Sagarmatha Company.

Cash and marketable securities	Rs. 10,000	Sales	Rs. 100,000
Fixed assets	Rs. 28,350	Net income	Rs. 5,000
Quick ratio ✓	2.0x	Current ratio ✓	3.0x
Days sales outstanding (DSO) ✓	40 days	Return on equity (ROE) ✓	12.0%

Calculation is based on 360 days. Sagarmatha has not issued any preferred stock.

- Find Sagarmatha's current assets.
- What are the limitations of ratio analysis?

[6+4]

Ans: (a) Rs 31,666.68

Solⁿ

$$\text{① Current Asset (C.A)} = ?$$

$$\text{or } 40,000,000 = 360 \text{ days} \times \text{receivable}$$

$$\text{DSO} = \frac{\text{Days in a Year} \times \text{Receivable}}{\text{Sales}}$$

$$\text{or } \text{Receivable} = \frac{40,000,000}{360}$$

$$\text{or, } 40 \text{ days} = \frac{360 \times \text{Receivable}}{100,000}$$

$$\therefore \text{Receivable} = \text{Rs. } 11,111.11$$

And

$$\text{Quick ratio} = \frac{\text{Current Asset} - \text{Inventory}}{\text{Current Liabilities}}$$

$$\begin{aligned} \therefore \text{Current Asset} &= \text{Cash \& marketable security} + \text{Receivable} \\ &= 10,000 + 11,111.11 \\ &= \text{Rs. } 21,111.11 \end{aligned}$$

$$\text{or, } 2 = \frac{21,111.11}{\text{C.L}}$$

$$\text{or } \text{Current Liabilities} = \frac{21,111.11}{2} = \text{Rs. } 10,555.55$$

$$\# \text{ Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

$$\text{or, } 3 = \frac{\text{Current Asset}}{10,555}$$

$$\therefore \text{Current Asset} = \text{Rs. } 31,667$$

(b) Limitation of Ratio Analysis:

- ⇒
- Historical in nature
 - Window dressing possible
 - No standard benchmarks
 - Ignores qualitative factors
 - Affected by inflation
 - Industry differences
 - Shows static picture
 - Depends on accuracy of data
 - Not a substitute for judgment

Ans: (a) Rs 31,566.58

3. 2078 Q.No. 13 2077 Q.No. 16a

Following data apply to Hi-Tech Company (Rs in Thousand)

Cash and marketable securities	→ Rs 100	Sales	Rs 1,000
Fixed assets	Rs 283.50	Net income	Rs 50
Quick ratio	2.0 ×	Current ratio	3.0 ×
Days sales outstanding (DSO)	40 days	Return on equity (ROE)	12% = $\frac{141}{\text{Common eq.}}$

Calculation is based on a 360 days.
Hi-Tech has not issued any preferred stocks.

Find: Hi-Tech's (a) account receivable, (b) current liabilities, (c) current assets, (d) total assets, (e) total debt and (f) return on assets.

Ans: (a) Rs. 111.11 (b) Rs. 105.5 (c) Rs. 316.5 (d) Rs. 600 (e) 77.83 (f) 8.33%

4. 2076 Q.No. 12

⇒ solution given,

DSO: 40 days

$$\# \text{ Days sales outstanding} = \frac{\text{Days in a year} \times \text{Receivable}}{\text{Sales}}$$

$$\text{or, } 40 = \frac{360 \times \text{Receivable}}{1,000}$$

$$\text{or } 40000 = 360 \times \text{receivable}$$

$$\text{or } \therefore \text{Account receivable} = \text{Rs. } 111.1 \text{ (Rs)}$$

$$\text{Quick Asset} = \text{C.A.} - \text{inventory}$$

$$\# \text{ Quick Ratio} = \frac{\text{Current Asset} [111.1 + 100]}{\text{Current liability}}$$

$$\text{or, } 2 = \frac{\text{Rs. } 211.1}{\text{C.L}}$$

$$\text{or, current liabilities} = \frac{\text{Rs. } 211.1}{1.2}$$

$$\therefore \text{current liabilities} = \text{Rs. } 105.5 \text{ (Rs)}$$

$$\# \text{ Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

$$\text{or, } 3 = \frac{C.A}{105.5}$$

$$\therefore \text{Current Asset} = \text{Rs. } 316.5 \text{ (000)}$$

$$\# \text{ Total Asset} = \text{Fixed Asset} + \text{Current Asset}$$

$$= \text{Rs. } 283.50 + \text{Rs. } 316.50$$

$$= \text{Rs. } 600 \text{ (000)}$$

$$\# \text{ Total debt} = \text{Long Term debt}$$

$$\text{Long Term debt} = \text{Total Asset} - \text{Common equity} - \text{Current Liabilities}$$

$$= 600 - 416.66 - 105.5$$

$$= \text{Rs. } 77.79 \text{ (000)}$$

Where,

$$\text{ROE} = \frac{\text{Net income}}{\text{Common equity}}$$

$$\text{or, } 12\% = \frac{50}{\text{Common equity}}$$

$$\text{or } 0.12 \text{ Common equity} = 50$$

$$\therefore \text{Common equity} = \frac{50}{0.12} = \text{Rs. } 416.66$$

$$\# \text{ Return on Asset (ROA)} = ?$$

$$\text{ROA} = \frac{\text{Net income}}{\text{Total Asset}}$$

$$= \frac{50}{600}$$

$$= \text{Rs. } 0.0833$$

$$\text{or } 8.33\% \text{ Ans}$$

10

Ans: (a) Rs. 111.11 (b) Rs. 105.5 (c) Rs. 316.5 (d) Rs. 600 (e) 77.83 (f) 8.33%

4. 2076 Q.No. 12

b Kantipur Café has Rs 500,000 of debt outstanding, and it pays an interest rate of 10 percent annually. Its annual sales are Rs 2 million, its average tax is 30 percent and its net profit margin on sales is 5 percent. If the company does not maintain a times interest earned (TIE) ratio of at least 5 times, its bank will refuse to renew the loan and bankruptcy will result.

a. What is Kantipur Café's TIE ratio? Is the bank likely to renew the loan?
 b. By what percentage, net profit margin should increase in order to get loan renewed? [6+4]

5. 2075 Q.No. 13
 Complete the 2016 balance sheet for D. [6+4]
 Ans: (a) 3.85 times (b) 40%

Sol:

Given,

Debt outstanding = Rs. 500,000
 Interest rate (I) = 10% Annually
 Annual sales = Rs. 20,00,000
 Tax rate (T) = 30% or 0.30
 profit margin (Pm) = 5%

$$\text{Net profit} = 5\% \text{ of } 20,000,000 \\ = \text{Rs. } 1,00,000$$

$$\text{Interest Amount} = \\ 5,00,000 \times 10\% \\ = \text{Rs. } 50,000$$

① We know that: $TIE = \frac{EBIT}{I}$

$$= \frac{\text{Rs. } 1,92,857.14}{\text{Rs. } 50,000} = 3.85 \text{ times (Ans)}$$

Where,

$$EBIT = EBT + \text{interest} \\ = \text{Rs. } 1,42,857.14 + \text{Rs. } 50,000 = \boxed{\text{Rs. } 1,92,857.14}$$

EBT = ? Now,

$$\text{EBT} = \frac{\text{Net profit}}{1 - T} \\ = \frac{1,00,000}{1 - 0.30} \\ = \text{Rs. } 1,42,857.14$$

∴ Since, the TIE ratio is less than minimum standard of 5 times. The bank will not renew the loan.

⑥ To get loan renewed, the TIE ratio must be 5 times. To maintain the TIE ratio, the fixed EBIT must be as followed.

$$\text{TIE} = 5$$

$$\text{or, } \frac{\text{EBIT}}{\text{Interest}} = 5$$

$$\text{or, } \frac{\text{EBIT}}{50,000} = 5$$

$$\therefore \text{EBIT} = \text{Rs. } 2,50,000$$

And, the net income must be as followed:

$$\begin{aligned} \text{Net income} &= (\text{EBIT} - \text{Interest}) (1 - T) \\ &= (2,50,000 - 50,000) (1 - 0.30) \\ &= \text{Rs. } 1,40,000 \end{aligned}$$

Then new net profit should be:

$$\begin{aligned} \text{Net profit margin} &= \frac{\text{Net income}}{\text{Sales}} \\ &= \frac{\text{Rs. } 1,40,000}{\text{Rs. } 2,000,000} \\ &= 0.07 \text{ or } 7\% \end{aligned}$$

Hence, the change in net profit margin = $\frac{7\% - 5\%}{5\%}$

$$= 0.40 \text{ or } 40\% \text{ Ans.}$$

Unit 1: Introduction to Financial Management

1. What do you mean by wealth maximization goal of the firm? / What is value (wealth) maximization?

Wealth Maximization is the primary goal of a financial manager and the firm. It refers to the process of increasing the net worth (i.e., the market value of equity shares) of a company for its shareholders. Unlike profit maximization, which focuses on short-term accounting profits, wealth maximization is a long-term goal that considers the risks and uncertainties of future cash flows, the time value of money, and the dividend payment policy. The ultimate objective is to maximize the market price of the company's stock, which directly benefits the shareholders by increasing their wealth.

धन अधिकतमीकरण भनेको कम्पनीको प्रमुख लक्ष्य हो। यसले कम्पनीको शेयरधनीहरूको नेट वर्थ (अर्थात, इक्विटी शेयरहरूको बजार मूल्य) बढाउने प्रक्रियालाई जनाउँछ। लाभ अधिकतमीकरण भनेको अल्पकालीन लेखा लाभमा केन्द्रित हुन्छ भने, धन अधिकतमीकरण दीर्घकालीन लक्ष्य हो जसले भविष्यको क्यास प्रवाहको जोखिम र अनिश्चितता, मुद्राको समय मूल्य, र लाभांश भुक्तानी नीति जस्ता कुराहरू विचार गर्दछ। यसको अन्तिम उद्देश्य कम्पनीको शेयरको बजार मूल्यलाई अधिकतम बनाउनु हो, जसले गर्दा शेयरधनीहरूको सम्पत्ति सीधै बढ्छ।

2. What are the functions of managerial finance? (2079 Q.No. 1)

The functions of managerial finance, also known as financial management, are crucial for the effective operation of any business. Key functions include:

- **Investment Decision (Capital Budgeting):** Deciding which long-term assets (e.g., plants, machinery) or projects to invest in.
- **Financing Decision (Capital Structure):** Determining the best mix of debt and equity to finance the company's operations and investments.
- **Dividend Decision:** Deciding how much profit to distribute to shareholders as dividends and how much to retain in the business for reinvestment.
- **Liquidity Decision (Working Capital Management):** Managing day-to-day finances to ensure the company has enough cash to meet its short-term obligations.
- **Financial Planning and Forecasting:** Estimating future financial needs and performance.
- **Risk Management:** Identifying, analyzing, and mitigating various financial risks.

प्रबन्धकीय वित्तका कार्यहरू, जसलाई वित्तीय व्यवस्थापन पनि भनिन्छ, कुनै पनि व्यवसायको प्रभावकारी संचालनको लागि महत्त्वपूर्ण हुन्। प्रमुख कार्यहरू यसमा समावेश छन्:

- **लगानी निर्णय (पूँजी बजेटिंग):** कुन दीर्घकालीन सम्पत्ति (जस्तै: कारखाना, मेशिनरी) वा परियोजनामा लगानी गर्ने भन्ने निर्णय गर्नु।
- **वित्तीय निर्णय (पूँजी संरचना):** कम्पनीको संचालन र लगानीको लागि ऋण र इक्विटीको उत्तम मिश्रण निर्धारण गर्नु।
- **लाभांश निर्णय:** शेयरधनीहरूलाई लाभांशको रूपमा कति लाभ वितरण गर्ने र पुनर्लगानीको लागि व्यवसायमा कति राख्ने भन्ने निर्णय गर्नु।
- **तरलता निर्णय (कार्यशील पूँजी व्यवस्थापन):** कम्पनीसँग आफ्ना अल्पकालीन दायित्वहरू पूरा गर्न पर्याप्त नगद भएको सुनिश्चित गर्न दैनिक वित्तको व्यवस्थापन गर्नु।
- **वित्तीय योजना र पूर्वानुमान:** भविष्यको वित्तीय आवश्यकता र प्रदर्शनको अनुमान लगाउनु।
- **जोखिम व्यवस्थापन:** विभिन्न वित्तीय जोखिमहरूको पहिचान, विश्लेषण र न्यूनीकरण गर्नु।

3. Write the meaning of financial management. (2078 Q.No. 1)

Financial Management is the strategic planning, organizing, directing, and controlling of financial undertakings in an organization. It involves the application of general management principles to the financial resources of a company. Its core purpose is to achieve the wealth maximization goal for shareholders by making optimal decisions regarding the acquisition, allocation, and control of financial resources.

वित्तीय व्यवस्थापन भनेको संगठनमा वित्तीय कार्यहरूको सामरिक योजना, संगठन, निर्देशन, र नियन्त्रण हो। यसले कम्पनीको वित्तीय स्रोतहरूमा सामान्य व्यवस्थापन सिद्धान्तहरूको अनुप्रयोग समावेश गर्दछ। वित्तीय स्रोतहरूको अधिग्रहण, आवंटन, र नियन्त्रण सम्बन्धी इष्टतम निर्णयहरू through शेयरधनीहरूको लागि धन अधिकतमीकरणको लक्ष्य प्राप्त गर्नु नै यसको मुख्य उद्देश्य हो।

4. Where do finance graduates may seek career opportunities? (2076 Q.No. 1)

Finance graduates have a wide range of lucrative career opportunities in various sectors, including:

- **Banking:** Commercial banks, investment banks, development banks.
- **Insurance Companies:** In roles like actuarial, underwriting, and risk management.
- **Investment Firms & Brokerage Houses:** As financial analysts, portfolio managers, or stockbrokers.
- **Corporate Sector:** In companies as financial managers, financial analysts, or treasury managers.
- **Government Agencies:** In revenue departments, central banks (like Nepal Rastra Bank), and other regulatory bodies.
- **Audit and Consulting Firms:** As auditors or financial consultants.
- **Non-Profit Organizations:** Managing their funds and grants.
- **Academia:** As teachers and researchers in universities and colleges.

वित्त स्नातकहरूको लागि विभिन्न क्षेत्रहरूमा लाभदायक करियरका अवसरहरू छन्, जस्तै:

- **बैंकिंग:** वाणिज्य बैंक, लगानी बैंक, विकास बैंक।
- **बीमा कम्पनीहरू:** एकचुअरी, अण्डरराइटिंग, र जोखिम व्यवस्थापन जस्ता भूमिकाहरूमा।
- **लगानी फर्महरू र दलाली घरहरू:** वित्तीय विश्लेषक, पोर्टफोलियो प्रबन्धक, वा शेयर दलालको रूपमा।
- **क cooperate क्षेत्र:** कम्पनीहरूमा वित्तीय प्रबन्धक, वित्तीय विश्लेषक, वा ट्रेजरी प्रबन्धकको रूपमा।
- **सरकारी निकायहरू:** राजस्व विभाग, केन्द्रीय बैंक (नेपाल राष्ट्र बैंक जस्तै), र अन्य नियामक निकायहरूमा।
- **अडिट र परामर्श फर्महरू:** अडिटर वा वित्तीय सल्लाहकारको रूपमा।
- **गैर-लाभकारी संस्थाहरू:** उनीहरूको कोष र अनुदानहरूको व्यवस्थापन।
- **शैक्षिक क्षेत्र:** विश्वविद्यालय र कलेजहरूमा शिक्षक र शोधकर्ताको रूपमा।

5. Why do we study financial management?

We study financial management for several critical reasons:

- **To Make Sound Financial Decisions:** It provides the knowledge and tools needed to make informed decisions about investing, financing, and dividends.
 - **To Maximize Shareholder Wealth:** It teaches how to increase the value of the firm, which is the ultimate goal.
 - **To Manage Resources Efficiently:** It helps in the optimal utilization of scarce financial resources.
 - **To Understand Financial Markets:** It provides insight into how capital markets work and how to raise funds from them.
 - **For Career Advancement:** It is essential for anyone pursuing a career in finance, banking, corporate management, or entrepreneurship.
 - **For Personal Financial Planning:** The principles of financial management are equally applicable to managing personal finances effectively.
- हामी वित्तीय व्यवस्थापन किन पढ्छौं भन्नेका धेरै महत्वपूर्ण कारणहरू छन्:
- **सुदृढ वित्तीय निर्णयहरू गर्न:** यसले लगानी, वित्तीयन, र लाभांशका बारेमा सूचित निर्णयहरू गर्न आवश्यक ज्ञान र उपकरणहरू प्रदान गर्दछ।
 - **शेयरधनीको सम्पत्ति बढाउन:** यसले फर्मको मूल्य कसरी बढाउने भन्ने सिकाउँदछ, जुन अन्तिम लक्ष्य हो।
 - **स्रोतहरू कार्यक्षम रूपमा व्यवस्थापन गर्न:** यसले दुर्लभ वित्तीय स्रोतहरूको इष्टतम उपयोगमा मद्दत गर्दछ।
 - **वित्तीय बजारहरू बुझ्न:** यसले पूँजी बजारहरू कसरी काम गर्छन् र तिनीहरूबाट कसरी कोष सङ्कलन गर्ने भन्ने बुझाउँ दिन्छ।
 - **करियरको उन्नतिको लागि:** वित्त, बैंकिंग, कर्पोरेट व्यवस्थापन, वा उद्यमितामा करियर बनाउन चाहने कसैको लागि पनि यो आवश्यक छ।

- **व्यक्तिगत वित्तीय योजनाको लागि:** वित्तीय व्यवस्थापनका सिद्धान्तहरू व्यक्तिगत वित्तीय व्यवस्थापनमा पनि समान रूपमा लागू हुन्छन्।
- **Question: How does wealth maximization goal overcome the drawbacks of the profit maximization goal? / What is wealth maximization? Why should a firm concentrate primarily on wealth maximization instead of profit maximization?**

Introduction:

The primary objective of financial management has evolved from the traditional concept of profit maximization to the modern concept of wealth maximization. While profit maximization aims to increase the accounting profits of a firm, it is often criticized for its short-sightedness and ignorance of other critical factors. Wealth maximization, on the other hand, focuses on maximizing the net present value (NPV) of a firm, which is reflected in the market price of its shares. This goal is considered superior as it aligns the interests of the management with those of the shareholders, who are the ultimate owners of the company.

Wealth Maximization Overcomes the Drawbacks of Profit Maximization in the Following Ways:

1. **Considers the Time Value of Money (TVM):**
 - **Profit Maximization:** Ignores TVM. It treats a rupee received today and a rupee received five years later as of the same value.
 - **Wealth Maximization:** Explicitly recognizes that money has a time value. It discounts future cash flows to their present value, ensuring a more accurate assessment of a project's true worth.
2. **Accounts for Risk and Uncertainty:**
 - **Profit Maximization:** Pursues higher profits without regard to the associated risk. A project with high returns but extreme risk might be accepted.
 - **Wealth Maximization:** Incorporates risk into the decision-making process. It demands higher returns for undertaking higher risk, leading to more balanced and sustainable decisions.
3. **Focus on Cash Flows, Not Accounting Profits:**
 - **Profit Maximization:** Focuses on accounting profit, which includes non-cash items (e.g., depreciation) and can be manipulated.

- **Wealth Maximization:** Focuses on the timing and magnitude of actual cash flows, which are more objective and directly determine the firm's ability to create value.

4. Long-Term Orientation:

- **Profit Maximization:** Often leads to short-term decisions (e.g., cutting R&D or maintenance costs) to boost immediate profits, which can harm the firm's long-term health.
- **Wealth Maximization:** Is a long-term goal. It may involve sacrificing short-term profits to invest in projects that will generate greater cash flows in the future, thereby ensuring sustainable growth.

5. Considers the Impact on Share Price:

- **Profit Maximization:** Has no clear correlation with the market price of a share.
- **Wealth Maximization:** Directly aims to maximize the market value of the company's shares. Since the market considers all available information, including risk and timing of returns, a higher share price is a direct indicator of increased shareholder wealth.

6. Objective and Clear Decision Criterion:

- **Profit Maximization:** Is ambiguous (e.g., which profit? short-term or long-term? before-tax or after-tax?).
- **Wealth Maximization:** Uses a clear criterion: accept all projects with a positive Net Present Value (NPV). This removes ambiguity and provides a unified goal for the firm.

Conclusion:

In conclusion, while profit maximization seems like a simple and intuitive goal, its numerous drawbacks make it an inadequate and often dangerous objective for a firm. Wealth maximization successfully overcomes these limitations by incorporating the time value of money, risk, cash flows, and a long-term perspective. It provides a precise, unambiguous, and shareholder-centric objective that guides management towards decisions that truly enhance the owners' economic welfare, making it the universally accepted supreme goal of financial management.

परिचय:

वित्तीय व्यवस्थापनको प्राथमिक उद्देश्य परम्परागत लाभ अधिकतमीकरणको अवधारणाबाट विकसित भई आधुनिक धन अधिकतमीकरणको अवधारणामा पुगेको छ। लाभ अधिकतमीकरणले फर्मको लेखा लाभ बढाउनुको लागि प्रयास गर्दछ, तर यसलाई यसको अल्पकालीन सोच र अन्य महत्त्वपूर्ण कारकहरूको अवहेलना गर्ने भएकाले गर्दा आलोचना गरिन्छ। यसको विपरीत, धन अधिकतमीकरणले फर्मको नेट वर्तमान मूल्य (NPV) लाई अधिकतम बनाउनमा केन्द्रित गर्दछ, जुन यसको शेयरको बजार मूल्यमा प्रतिबिम्बित हुन्छ। यो लक्ष्यलाई श्रेष्ठ मानिन्छ किनभने यसले व्यवस्थापनको हित कम्पनीका अन्तिम मालिक शेयरधनीहरूको हितसँग मेल खान्छ।

धन अधिकतमीकरणले लाभ अधिकतमीकरणका कमजोरीहरू कसरी दूर गर्छ भने:

१. मुद्राको समय मूल्यलाई विचार गर्दछ (TVM):

* **लाभ अधिकतमीकरण:** मुद्राको समय मूल्यलाई बेवास्ता गर्दछ। यसले आज प्राप्त भएको एक रुपैयाँ र पाँच वर्षपछि प्राप्त भएको एक रुपैयाँलाई समान मूल्यको मान्दछ।

* **धन अधिकतमीकरण:** मुद्राको समय मूल्यलाई स्पष्ट रूपमा मान्यता दिन्छ। यसले भविष्यका क्यास प्रवाहहरूलाई तिनीहरूको वर्तमान मूल्यमा छुट्ट्याउँदछ, जसले गर्दा परियोजनाको वास्तविक मूल्यको अधिक सही मूल्याङ्कन हुन्छ।

२. जोखिम र अनिश्चिततालाई खातामा लिन्छ:

* **लाभ अधिकतमीकरण:** सम्बन्धित जोखिमको विचार नगरी अधिक लाभको पीछा गर्दछ। उच्च रिटर्न तर अत्यधिक जोखिम भएको परियोजना स्वीकार गरिन सक्छ।

* **धन अधिकतमीकरण:** निर्णय प्रक्रियामा जोखिमलाई समावेश गर्दछ। उच्च जोखिम उठाउँदा उच्च रिटर्नको माग गर्दछ, जसले गर्दा अधिक सन्तुलित र टिकाऊ निर्णयहरू निम्त्याउँछ।

३. लेखा लाभमा होइन, क्यास प्रवाहमा केन्द्रित गर्दछ:

* **लाभ अधिकतमीकरण:** लेखा लाभमा केन्द्रित गर्दछ, जसमा गैर-नगद वस्तुहरू (जस्तै: मूल्यहास) समावेश हुन्छन् र यसलाई हेरफेर गर्न सकिन्छ।

* **धन अधिकतमीकरण:** वास्तविक क्यास प्रवाहहरूको समय र मात्रामा केन्द्रित गर्दछ, जुन अधिक वस्तुनिष्ठ हुन्छन् र फर्मले मूल्य सिर्जना गर्ने क्षमतालाई सीधै निर्धारण गर्दछन्।

४. दीर्घकालीन उन्मुखता:

* **लाभ अधिकतमीकरण:** अक्सर अल्पकालीन निर्णयहरू (जस्तै: अनुसन्धान & विकास वा मर्मतसम्भार लागत कटौती) निम्त्याउँछ, जसले फर्मको दीर्घकालीन स्वास्थ्यलाई हानी पुर्याउन सक्छ।

* **धन अधिकतमीकरण:** एक दीर्घकालीन लक्ष्य हो। यसले भविष्यमा ठूलो क्यास प्रवाह सिर्जना गर्ने परियोजनाहरूमा लगानी गर्न अल्पकालीन लाभलाई बलिदान गर्न सक्छ, जसले गर्दा टिकाऊ वृद्धि सुनिश्चित हुन्छ।

५. शेयर मूल्यमा पर्ने प्रभावलाई विचार गर्दछ:

* **लाभ अधिकतमीकरण:** शेयरको बजार मूल्यसँग कोरै सम्बन्ध छैन।

* **धन अधिकतमीकरण:** कम्पनीका शेयरहरूको बजार मूल्यलाई सीधै अधिकतम बनाउनुको लागि लक्ष्य राख्दछ। बजारले जोखिम र रिटर्नको समय लगायतका सबै उपलब्ध जानकारीहरू विचार गर्दछ, र उच्च शेयर मूल्य शेयरधनीको सम्पत्ति बढेको प्रत्यक्ष सूचक हो।

६. वस्तुनिष्ठ र स्पष्ट निर्णय मापदण्ड:

* **लाभ अधिकतमीकरण:** अस्पष्ट हुन्छ (जस्तै: कुन लाभ? अल्पकालीन वा दीर्घकालीन? करपूर्व वा करपछि?)।

* **धन अधिकतमीकरण:** एक स्पष्ट मापदण्ड प्रयोग गर्दछ: सकारात्मक नेट वर्तमान मूल्य (NPV) भएका सबै परियोजनाहरू स्वीकार गर्नु। यसले अस्पष्टतालाई हटाउँछ र फर्मको लागि एकीकृत लक्ष्य प्रदान गर्दछ।

निष्कर्ष:

यसरी, लाभ अधिकतमीकरण सरल र सहज लक्ष्य जस्तो देखिए तापनि, यसको धेरै कमजोरीहरूले गर्दा यो फर्मको लागि एक अपर्याप्त र प्रायः खतरनाक उद्देश्य हो। धन अधिकतमीकरणले मुद्राको समय मूल्य, जोखिम, क्यास प्रवाह, र दीर्घकालीन दृष्टिकोणलाई समावेश गरेर यी सीमाहरूलाई सफलतापूर्वक दूर गर्दछ। यसले एक सटीक, अविभाज्य, र शेयरधनी-केन्द्रित उद्देश्य प्रदान गर्दछ, जसले व्यवस्थापनलाई मालिकहरूको आर्थिक कल्याणलाई वास्तवमै बढाउने निर्णयहरूतर्फ मार्गनिर्देशन गर्दछ। यही कारणले गर्दा यो वित्तीय व्यवस्थापनको सर्वोच्च लक्ष्यको रूपमा सार्वभौमिक रूपमा स्वीकार गरिएको छ।

- **Question: Will profit maximization always result in stock price maximization? Discuss.**

Introduction:

The relationship between profit maximization and stock price maximization is a topic of significant debate in financial management. While one might assume that higher profits automatically lead to a higher stock price, this is not always the case. Stock price is determined by the market's expectation of the firm's *future* cash flows, discounted for risk and time, not just its *current* accounting profits.

Reasons Why Profit Maximization May NOT Lead to Stock Price Maximization:

1. **Ignores Risk:** A firm might achieve high profits by taking on extremely risky projects. The stock market will discount these high profits due to the high risk, potentially leading to a lower stock price despite high current earnings.
2. **Ignores Time Value of Money:** A strategy that generates a large profit in the distant future is less valuable than one that generates smaller but earlier profits. Profit maximization does not distinguish between the two, but the stock market, through discounting, absolutely does.
3. **Focus on Accounting Profits:** Profit maximization focuses on accounting figures, which can be manipulated using different depreciation methods, inventory valuations, etc. The market looks beyond these accounting tricks to the underlying cash-generating ability of the firm.
4. **Short-Termism:** To maximize short-term profits, management might cut essential expenses like research & development (R&D), marketing, and maintenance. This harms the firm's long-term competitive advantage and growth prospects, causing investors to lose confidence and the stock price to fall.
5. **Ignores Dividend Policy:** Profit maximization does not consider shareholders' preference for dividends versus retained earnings. A policy of retaining all profits for uncertain future growth, when shareholders prefer dividends, can lead to dissatisfaction and a drop in stock price.

When Might It Align?

In some simple, short-term scenarios with no risk differences and immediate payoffs, profit maximization might coincidentally align with an increase in stock price. However, this is the exception, not the rule.

Conclusion:

In conclusion, profit maximization does not guarantee stock price maximization. The goal of profit is too narrow, often short-term, and ignores the critical factors of risk, timing, and sustainability that the stock market values. Therefore, a blind pursuit of profit maximization can actually be detrimental to shareholder wealth. Wealth maximization, which inherently considers all these factors, is the reliable path to achieving the ultimate goal of maximizing the firm's share price.

परिचय:

लाभ अधिकतमीकरण र शेयर मूल्य अधिकतमीकरणबीचको सम्बन्ध वित्तीय व्यवस्थापनमा महत्वपूर्ण बहसको विषय हो। कोही यो अनुमान लगाउन सक्छ कि उच्च लाभले स्वचालित रूपमा उच्च शेयर मूल्य निम्त्याउँछ, तर यो सधैं सत्य हुँदैन। शेयर मूल्य फर्मको भविष्यको क्यास प्रवाहको बजारको अपेक्षाद्वारा, जोखिम र समयको लागि छुट्ट्याएर, निर्धारण हुन्छ, केवल यसको वर्तमानलेखा लाभमात्र होइन।

कारणहरू किन लाभ अधिकतमीकरणले शेयर मूल्य अधिकतमीकरण निम्त्याउँदैन:

१. **जोखिमलाई बेवास्ता गर्दछ:** फर्मले अत्यधिक जोखिमपूर्ण परियोजनाहरू लिएर उच्च लाभ प्राप्त गर्न सक्छ। उच्च जोखिमको कारण शेयर बजारले यी उच्च लाभहरूलाई छुट्ट्याउँछ, जसको परिणामवस उच्च वर्तमान आय भए तापनि शेयर मूल्य घट्न सक्छ।
२. **मुद्राको समय मूल्यलाई बेवास्ता गर्दछ:** टाढाको भविष्यमा ठूलो लाभ उत्पन्न गर्ने रणनीति सानो तर छिटो लाभ उत्पन्न गर्ने रणनीतिभन्दा कम मूल्यवान हुन्छ। लाभ अधिकतमीकरणले यी दुईबीच भिन्नता नगर्ने गर्दछ, तर छुट्ट्याउने प्रक्रियाद्वारा शेयर बजारले गर्दछ।
३. **लेखा लाभमा केन्द्रित गर्दछ:** लाभ अधिकतमीकरण लेखा आँकडाहरूमा केन्द्रित गर्दछ, जसलाई विभिन्न मूल्यहास विधिहरू, इन्भेन्टरी मूल्याङ्कन, आदिद्वारा हेरफेर गर्न सकिन्छ। बजारले यी लेखा चालहरूभन्दा पर फर्मको अन्तर्निहित नगद सिर्जना गर्ने क्षमतातर्फ हेर्दछ।
४. **अल्पकालीन सोच:** अल्पकालीन लाभ अधिकतम बनाउन, व्यवस्थापनले अनुसन्धान & विकास (R&D), विपणन, र मर्मतसम्भार जस्ता आवश्यक खर्चहरू कटौती गर्न सक्छ। यसले फर्मको

दीर्घकालीन प्रतिस्पर्धात्मक लाभ र वृद्धिको सम्भावनालाई हानी पुर्याउँछ, जसले गर्दा लगानीकर्ताहरूको विश्वास घट्छ र शेयर मूल्य झर्छ।

५. **लाभांश नीतिलाई बेवास्ता गर्दछ:** लाभ अधिकतमीकरणले लाभांश बनाम बरकरार राखिएको आयको लागि शेयरधनीहरूको प्राथमिकतालाई विचार गर्दैन। शेयरधनीहरूले लाभांश मनपर्दा, अनिश्चित भविष्यको वृद्धिको लागि सबै लाभलाई बरकरार राख्ने नीतिले असन्तुष्टि र शेयर मूल्यमा गिरावट निम्त्याउन सक्छ।

कहिले यो मेल खान सक्छ?

केही साधारण, अल्पकालीन परिदृश्यहरूमा जहाँ जोखिमको फरक हुँदैन र तत्काल भुक्तानी हुन्छ, लाभ अधिकतमीकरणले संयोगवश शेयर मूल्य वृद्धिसँग मेल खाउन सक्छ। तर यो अपवाद हो, नियम होइन।

निष्कर्ष:

यसरी, लाभ अधिकतमीकरणले शेयर मूल्य अधिकतमीकरणको ग्यारेन्टी दिँदैन। लाभको लक्ष्य धेरै साँघुरो, प्रायः अल्पकालीन हुन्छ, र जोखिम, समय, र टिकाऊपण जस्ता महत्वपूर्ण कारकहरूलाई बेवास्ता गर्दछ जुन शेयर बजारले मूल्याङ्कन गर्दछ। त्यसैले, लाभ अधिकतमीकरणको अन्धा पीछा वास्तवमै शेयरधनीको सम्पत्तिको लागि हानिकारक हुन सक्छ। यी सबै कारकहरूलाई स्वाभाविक रूपमा विचार गर्ने धन अधिकतमीकरण नै फर्मको शेयर मूल्य अधिकतम बनाउने अन्तिम लक्ष्य प्राप्त गर्ने विश्वसनीय मार्ग हो।

10. Explain the primary responsibilities of a corporate financial manager.

Introduction: A corporate financial manager is responsible for making key decisions that affect the financial health and value of a firm. Their primary goal is to ensure the company has enough funds to operate and grow while maximizing shareholder wealth.

Primary Responsibilities:

1. **Investment Decision:** Evaluating and deciding which long-term projects or assets (like new machinery or plants) the company should invest in. This is also known as capital budgeting.

2. **Financing Decision:** Determining the best mix of debt and equity (loans vs. shares) to finance the company's operations and investments. This is called capital structure planning.
3. **Dividend Decision:** Deciding how much of the company's profit to distribute to shareholders as dividends and how much to retain in the business for future growth.
4. **Liquidity Management:** Ensuring the company has enough cash and liquid assets to meet its day-to-day expenses and short-term obligations without risking insolvency.
5. **Financial Planning & Forecasting:** Estimating future financial needs and preparing budgets to guide the company towards its goals.
6. **Risk Management:** Identifying and mitigating financial risks related to currency rates, interest rates, and credit.

परिचय: एक corporate वित्तीय प्रबन्धक कम्पनीको वित्तीय स्वास्थ्य र मूल्यलाई प्रभावित गर्ने प्रमुख निर्णयहरू गर्न जिम्मेवार हुन्छ। उनको प्राथमिक लक्ष्य कम्पनीसँग संचालन र वृद्धिको लागि पर्याप्त कोष छ भनी सुनिश्चित गर्दै शेयरधनीको सम्पत्ति अधिकतम बनाउनु हो।

प्राथमिक जिम्मेवारीहरू:

१. **लगानी निर्णय:** कम्पनीले कुन दीर्घकालीन परियोजना वा सम्पत्ति (जस्तै नयाँ मेशिनरी वा कारखाना) मा लगानी गर्ने भन्ने मूल्याङ्कन र निर्णय गर्नु। यसलाई पूँजी बजेटिंग पनि भनिन्छ।
२. **वित्तीय निर्णय:** कम्पनीको संचालन र लगानीको लागि ऋण र इक्विटी (लोन बनाम शेयर) को उत्तम मिश्रण निर्धारण गर्नु। यसलाई पूँजी संरचना योजना भनिन्छ।
३. **लाभांश निर्णय:** कम्पनीको लाभको कति भाग शेयरधनीहरूलाई लाभांशको रूपमा वितरण गर्ने र भविष्यको वृद्धिको लागि व्यवसायमा कति राख्ने भन्ने निर्णय गर्नु।
४. **तरलता व्यवस्थापन:** दिवालिया हुने जोखिम नलिई दैनिक खर्च र अल्पकालीन दायित्वहरू पूरा गर्न कम्पनीसँग पर्याप्त नगद र तरल सम्पत्ति छन् भनी सुनिश्चित गर्नु।
५. **वित्तीय योजना & पूर्वानुमान:** भविष्यको वित्तीय आवश्यकताहरू अनुमान गर्नु र कम्पनीलाई यसको लक्ष्यतर्फ मार्गनिर्देशन गर्न बजेट तयार गर्नु।
६. **जोखिम व्यवस्थापन:** मुद्रा दर, ब्याज दर, र क्रेडिट सम्बन्धित वित्तीय जोखिमहरूको पहिचान र न्यूनीकरण गर्नु।

11. What is wealth maximization? Why is wealth maximization a superior goal to profit maximization?

Introduction: Wealth Maximization is the primary objective of financial management. It aims to increase the net present value of a firm, which is reflected in the maximization of the market price of its shares.

What it is: It is the process of maximizing the market value of the company's equity shares, thereby increasing the shareholders' wealth.

Why it is superior:

1. **Considers Time Value of Money:** It values money received today more than money received in the future.
2. **Accounts for Risk:** It considers the risk of future cash flows; higher risk requires higher returns.
3. **Focus on Cash Flow:** It is based on actual cash flows, not accounting profits which can be manipulated.
4. **Long-term Objective:** It promotes long-term, sustainable growth over short-term profit gains.
5. **Clear Decision Criterion:** It uses the Net Present Value (NPV) rule for accepting or rejecting projects.

परिचय: धन अधिकतमीकरण वित्तीय व्यवस्थापनको प्राथमिक उद्देश्य हो। यसले फर्मको नेट वर्तमान मूल्य बढाउनुको लागि लक्ष्य राख्दछ, जुन यसको शेयरहरूको बजार मूल्य अधिकतमकरणमा प्रतिबिम्बित हुन्छ।

यो के हो?: यो कम्पनीको इक्विटी शेयरहरूको बजार मूल्य अधिकतम बनाउने प्रक्रिया हो, जसद्वारा शेयरधनीहरूको सम्पत्ति बढाउँदछ।

यो किन श्रेष्ठ छ:

१. **मुद्राको समय मूल्यलाई विचार गर्दछ:** यसले आज प्राप्त भएको मुद्रालाई भविष्यमा प्राप्त भएको भन्दा बढी मूल्यवान ठान्दछ।
२. **जोखिमलाई खातामा लिन्छ:** यसले भविष्यको क्यास प्रवाहको जोखिमलाई विचार गर्दछ; उच्च

जोखिमले उच्च रिटर्नको माग गर्दछ।

३. **क्यास प्रवाहमा केन्द्रित:** यो वास्तविक क्यास प्रवाहमा आधारित हुन्छ, लेखा लाभमा होइन जसलाई हेरफेर गर्न सकिन्छ।

४. **दीर्घकालीन उद्देश्य:** यसले अल्पकालीन लाभ प्राप्तिभन्दा दीर्घकालीन, टिकाऊ वृद्धिलाई बढावा दिन्छ।

५. **स्पष्ट निर्णय मापदण्ड:** यसले परियोजनाहरू स्वीकार वा अस्वीकार गर्न Net Present Value (NPV) को नियम प्रयोग गर्दछ।

12. "Maximization of stakeholder's welfare should be the ultimate goal of modern corporate firm." Discuss.

Introduction: This statement argues that a firm's goal should extend beyond just shareholders to include all parties affected by its actions, known as stakeholders.

Discussion:

- **Stakeholders** include employees, customers, suppliers, creditors, the community, and the government, alongside shareholders.
- **Pros:** Focusing on stakeholder welfare can build a positive reputation, ensure employee loyalty, attract customers, and lead to sustainable long-term success, which ultimately benefits shareholders as well.
- **Cons:** It can be a vague and conflicting goal. It is difficult to balance the often competing interests of different stakeholder groups (e.g., higher wages for employees vs. higher profits for shareholders).
- **Conclusion:** While considering stakeholder welfare is crucial for ethical and sustainable business, **Wealth Maximization** remains the primary, measurable financial goal. A firm that ignores stakeholders will ultimately fail, but its core financial objective is to maximize owner wealth, which provides a clear direction for decision-making.

परिचय: यो कथनले फर्मको लक्ष्य शेयरधनीमात्रभन्दा बढी यसको कार्यहरूद्वारा प्रभावित हुने सबै पक्षहरू, जसलाई हितधारक भनिन्छ, समावेश गर्नुपर्छ भनेर तर्क गर्दछ।

चर्चा:

- **हितधारकहरूमा** कर्मचारी, ग्राहक, आपूर्तिकर्ता, लेनदार, सामुदायिक, र सरकार, साथै शेयरधनीहरू समावेश छन्।
- **पक्ष:** हितधारक कल्याणमा केन्द्रित गर्दा सकारात्मक प्रतिष्ठा निर्माण गर्न, कर्मचारीको वफादारी सुनिश्चित गर्न, ग्राहकहरूलाई आकर्षित गर्न, र दीर्घकालीन सफलता प्राप्त गर्न मद्दत गर्न सक्छ, जसले अन्त्यमा शेयरधनीहरूलाई पनि फाइदा पुर्याउँछ।
- **विपक्ष:** यो एक अस्पष्ट र विरोधाभासी लक्ष्य हुन सक्छ। विभिन्न हितधारक समूहहरूको प्रायः प्रतिस्पर्धात्मक हितहरू (जस्तै कर्मचारीहरूको लागि उच्च तलब बनाम शेयरधनीहरूको लागि उच्च लाभ) लाई सन्तुलन गर्न गाह्रो हुन्छ।
- **निष्कर्ष:** हितधारक कल्याणलाई विचार गर्नु नैतिक र टिकाऊ व्यवसायको लागि महत्त्वपूर्ण भए तापनि, **धन अधिकतमीकरण** नै प्राथमिक, मापन योग्य वित्तीय लक्ष्य बनी रहन्छ। हितधारकहरूलाई बेवास्ता गर्ने फर्म अन्त्यमा असफल हुनेछ, तर यसको मुख्य वित्तीय उद्देश्य मालिकको सम्पत्ति अधिकतम बनाउनु हो, जसले निर्णय निर्माणको लागि स्पष्ट दिशा प्रदान गर्दछ।

13. What is financial management? Explain the importance of financial management.

Introduction: Financial Management is the strategic planning, organizing, directing, and controlling of all financial activities and resources within an organization.

What it is: It involves making decisions about investment, financing, and dividends to achieve the overall goal of wealth maximization.

Importance:

1. **Helps in Financial Planning:** Ensures adequate funds are available at the right time.
2. **Guides Investment Decisions:** Helps in selecting the best projects that generate maximum returns.
3. **Improves Profitability:** By reducing costs of funds and using resources efficiently.
4. **Increases Firm's Value:** Good financial decisions lead to a higher share price.
5. **Ensures Survival & Growth:** Manages risks and ensures liquidity for smooth operations.

6. **Maximizes Shareholder Wealth:** It is the core objective of the discipline.

14. Why is shareholders' wealth maximization a better operating goal than profit maximization?

Introduction: While profit is important, Shareholders' Wealth Maximization is a more comprehensive and superior goal for guiding a firm's operations.

Why it is better:

1. **Long-term vs. Short-term:** Wealth maximization is a long-term goal, while profit maximization can encourage harmful short-term actions.
2. **Risk Consideration:** It accounts for risk; profit maximization ignores it.
3. **Time Value of Money:** It incorporates the concept that money today is worth more than money tomorrow.
4. **Objective Measure:** It is measured by share price, which is a market-based, objective measure. Profit can be manipulated.
5. **Focus on Cash Flow:** It is based on cash flows, which are real, not accounting profits.

परिचय: लाभ महत्त्वपूर्ण भए तापनि, शेयरधनीको धन अधिकतमीकरण फर्मको संचालनलाई मार्गदर्शन गर्न एक अधिक व्यापक र श्रेष्ठ लक्ष्य हो।

यो किन राम्रो छ:

१. **दीर्घकालीन vs अल्पकालीन:** धन अधिकतमीकरण दीर्घकालीन लक्ष्य हो, जबकि लाभ अधिकतमीकरणले हानिकारक अल्पकालीन कार्यहरूलाई प्रोत्साहन गर्न सक्छ।
२. **जोखिम विचार:** यसले जोखिमलाई खातामा लिन्छ; लाभ अधिकतमीकरणले यसलाई बेवास्ता गर्दछ।
३. **मुद्राको समय मूल्य:** यसले आजको मुद्रा भोलिको भन्दा बढी मूल्यवान हुन्छ भन्ने अवधारणालाई समावेश गर्दछ।
४. **वस्तुनिष्ठ मापन:** यसलाई शेयर मूल्यद्वारा मापन गरिन्छ, जुन बजार-आधारित, वस्तुनिष्ठ मापन हो। लाभलाई हेरफेर गर्न सकिन्छ।

५. क्यास प्रवाहमा केन्द्रित: यो क्यास प्रवाहमा आधारित हुन्छ, जुन वास्तविक हुन्छ, लेखा लाभ होइन।

15. Briefly explain the finance in the organization structure of the firm.

Introduction: In a typical corporate structure, the finance function is a critical department headed by a top executive, usually the Chief Financial Officer (CFO).

Structure:

- The **Board of Directors** and shareholders provide overall guidance.
- The **Chief Financial Officer (CFO)** is responsible for all financial strategies and reports to the CEO.
- Under the CFO, there are usually two key controllers:
 1. **Treasurer:** Manages external financial activities like cash management, raising capital (financing), banking relations, and risk management.
 2. **Controller:** Manages internal financial activities like accounting, taxation, financial reporting, and budgeting.

परिचय: एक सामान्य corporate संरचनामा, वित्त कार्य एक महत्वपूर्ण विभाग हो जसको नेतृत्व एक शीर्ष कार्यकारी, सामान्यतया मुख्य वित्तीय अधिकारी (CFO) ले गर्छन्।

संरचना:

- निर्देशक मण्डल र शेयरधनीहरूले समग्र मार्गदर्शन प्रदान गर्छन्।
- मुख्य वित्तीय अधिकारी (CFO) ले सबै वित्तीय रणनीतिहरूको लागि जिम्मेवार हुन्छन् र CEO लाई रिपोर्ट गर्छन्।
- CFO को अधीनमा, प्रायः दुई प्रमुख नियन्त्रक हुन्छन्:
 १. **कोषाध्यक्ष (Treasurer):** बाह्य वित्तीय गतिविधिहरू जस्तै नगद व्यवस्थापन, पूँजी सङ्कलन (वित्तीयन), बैंकिंग सम्बन्ध, र जोखिम व्यवस्थापनको व्यवस्थापन गर्छ।

२. **नियन्त्रक (Controller):** आन्तरिक वित्तीय गतिविधिहरू जस्तै लेखा, कर, वित्तीय विवरण, र बजेटिंगको व्यवस्थापन गर्छ।

16. Which goal would you like to recommend to a firm stock price maximization or profit maximization? Discuss.

Introduction: I would unequivocally recommend **Stock Price Maximization** (a measure of wealth maximization) over Profit Maximization as the primary goal for a firm.

Discussion:

- **Stock Price Maximization** is synonymous with shareholder wealth maximization. The market price of a stock reflects all available information about the firm's future cash flows, risk, and growth prospects.
- It inherently considers the **time value of money** and **risk**.
- It is a **long-term** and **objective** goal.
- **Profit Maximization** is a narrow goal that can be achieved through accounting manipulations and by taking excessive risks, which can destroy long-term value.
- Therefore, by focusing on maximizing stock price, a firm automatically works towards sustainable growth, efficient resource allocation, and ultimately, maximizing owner wealth.

परिचय: मैले फर्मको लागि प्राथमिक लक्ष्यको रूपमा लाभ अधिकतमीकरणभन्दा **शेयर मूल्य अधिकतमीकरण** (धन अधिकतमीकरणको एक मापन) लाई स्पष्ट रूपमा सिफारिस गर्नेछु।

चर्चा:

- **शेयर मूल्य अधिकतमीकरण** शेयरधनीको धन अधिकतमीकरणको पर्यायवाची हो। शेयरको बजार मूल्यले फर्मको भविष्यको क्यास प्रवाह, जोखिम, र वृद्धिको सम्भावनाहरूको बारेमा सबै उपलब्ध जानकारीलाई प्रतिबिम्बित गर्दछ।
- यसले स्वाभाविक रूपमा **मुद्राको समय मूल्य** र **जोखिम** लाई विचार गर्दछ।
- यो एक **दीर्घकालीन** र **वस्तुनिष्ठ** लक्ष्य हो।

- **लाभ अधिकतमीकरण** एक साँघुरो लक्ष्य हो जुन लेखा हेरफेर र अत्यधिक जोखिम लिएर प्राप्त गर्न सकिन्छ, जसले दीर्घकालीन मूल्य नष्ट गर्न सक्छ।
- त्यसैले, शेयर मूल्य अधिकतम बनाउनमा ध्यान केन्द्रित गरेर, फर्मले स्वचालित रूपमा टिकाऊ वृद्धि, कार्यक्षम स्रोत आवंटन, र अन्त्यमा, मालिकको सम्पत्ति अधिकतम बनाउने काम गर्दछ।

17. [Implied Question from years 2062, 2058, 2056: Goals of Financial Management]

Introduction: The recurring question from these years concerns the debate over the appropriate goal of financial management, primarily between Profit Maximization and Wealth Maximization.

Answer:

The most appropriate and recommended goal for a firm is **Wealth Maximization**, often measured by **Stock Price Maximization**. This goal is superior because:

1. It is **clear** and **unambiguous**.
2. It considers the **timing** and **risk** of returns (cash flows).
3. It focuses on increasing the **market value** of the firm, which benefits shareholders directly.
4. It aligns with the **economic welfare** of the owners.

Profit maximization is rejected due to its ignorance of risk, time value of money, and its potential to promote short-termism.

Unit 9: Working Capital Management

Formula:

① Cash Conversion Cycle (c.c.c.) = operating cycle - payable deferral period

$$\# \text{ CCC} = \text{ICP} + \text{RCP} - \text{PDP}$$

They face to market's

∴ ICP = Inventory conversion period

∴ RCP = Receivable collection period

∴ PDP = payable deferral period

Working Capital financing = CCC x Daily operating cost

$$\# \text{ ICP} = \frac{\text{Average inventory}}{\text{COGS} / 360}$$

$$\# \text{ PDP} = \frac{\text{Average account payable}}{\text{Cost of goods sold} / 360}$$

$$\# \text{ RCP} = \frac{\text{Average receivable}}{\text{Sales} / 360}$$

1. 2080 Q.No. 10

Delta Company's inventory conversion period is 40 days, and an average collection period is 50 days. Account payable is paid approximately 30 days after they arise. Calculate the firm's cash conversion cycle. [2]

Ans: 60 days

Solⁿ

Given,

$$ICP = 40 \text{ days}$$

$$ACP / RCP = 50 \text{ days}$$

$$PDP = 30 \text{ days}$$

$$CCC = ? \text{ Now,}$$

$$CCC = ICP + RCP - PDP$$

$$= 40 + 50 - 30$$

$$= 60 \text{ days Ans}$$

2. 2078 Q.No. 10

Delicious Biscuit Company's inventory conversion period is 40 days. Accounts payable is paid approximately 20 days after they arise. Calculate the firm's operating cycle and cash conversion cycle. [2]

123

3. 2076 Q.No. 10

What is the cash conversion cycle of a firm?

Ans: 70 days and 50 days

Given,

$$ICP = 30 \text{ days}$$

$$ACP = 40 \text{ days}$$

$$PDP = 20 \text{ days}$$

$$\text{Operating cycle} = ICP + ACP$$

$$= 30 + 40$$

$$= 70 \text{ days}$$

$$\Rightarrow CCC = ICP + RCP - PDP$$

$$= 70 - 20$$

$$= 50 \text{ days.}$$

3. 2076 Q.No. 10
 What is the cash conversion cycle of a firm with 30 days in inventory conversion period, 20 days in receivable collection period and 10 days in payable deferral period? What is its working capital financing requirement if it needs Rs 4,500 in daily operating costs? [2]
 Ans: 70 days and 50 days

4. 2075 Q.No. 9
 Mechi Teaching Company is ...
 Ans: 40 days and Rs 180,000

Given,

$$ICP = 30 \text{ days}$$

$$RCP = 20 \text{ days}$$

$$PDP = 10 \text{ days}$$

$$\text{Working Capital financing} = CCC \times \text{Daily operating cost}$$

$$= 40 \times \text{Rs } 4,500$$

$$= \text{Rs } 1,80,000 \text{ Ans}$$

$$\therefore CCC = ICP + RCP - PDP$$

$$= 30 + 20 - 10$$

$$= 40 \text{ days}$$

6. 2074 Q.No. 8a

The Zocco Corporation has an inventory conversion period of 75 days, a receivables collection period of 38 days, and a payables deferral period of 30 days. What is the length of the firm's cash conversion cycle? If Zocco's annual sales are Rs 3,421,875 and all sales are on credit, what is the firm's investment in accounts receivable?

[2.5+2.5]

Ans: CCC 83 days; Investment A/R Rs 356,250

7. 2068 Q.No. 7b

Given,

$$ICP = 75 \text{ days}$$

$$RCP = 38 \text{ days}$$

$$PDP = 30 \text{ days}$$

$$\begin{aligned} CCC &= ICP + RCP - PDP \\ &= 75 + 38 - 30 \\ &= 83 \text{ days} \end{aligned}$$

If given sales are on credit
Investment in Account receivable =

$$RCP \times \text{Average daily sales}$$

$$= 38 \text{ days} \times \frac{3,421,875}{365} \text{ days}$$

$$= \text{Rs. } 3,56,250$$

8. 2067 Q.No. 7b

You are given the following information:

Sales for the year just ended were Rs 60,000 and cost of goods sold was 60 percent of sales.

Item	Beginning (Rs)	Ending (Rs)
Inventory	5,000	7,000
Accounts receivable	1,600	2,400
Accounts payable	2,700	4,800

[1 × 4 + 2]

Required:

- How long does it take to collect its receivables?
- How long does inventory stay around before it is sold?
- How long does it take to pay its bills?
- Compute the cash conversion cycle.
- What measures should management take to improve cash conversion cycle?

Ans: (i) 12 days (ii) 60 days (iii) 37.50 days (iv) 34.5 days

B) Inventory Management

$EOQ = \sqrt{\frac{2AO}{c}}$ where, $A =$ Annual requirement

$O =$ ordering cost per order

No. of order = $\frac{A}{EOQ}$ $c =$ carrying cost

Total cost = $\sqrt{2AOC}$ or $\frac{A}{EOQ} \times O + \frac{EOQ}{2} \times c$

ROL [Re-order level] = maximum consumption \times maximum lead time

1. 2080 Q.No. 9

Sagarmatha Company uses 500,000 units of a product per year on a continuous basis. The product has carrying costs of Rs 10 per unit per year and fixed costs of Rs 1,000 per order. What is its EOQ?

[2]

Ans: 10,000 units

solⁿ Given,

Annual requirement (A) = 500,000 unit

Carrying cost (c) = Rs. 10 per unit

Ordering cost per order (O) = Rs. 1000

EOQ = ?

Now, we know that,

$$EOQ = \sqrt{\frac{2AO}{c}}$$

$$= \sqrt{\frac{2 \times 500,000 \times 1000}{10}}$$

$$= 10,000 \text{ unit}$$

\therefore Economic Order quantity is 10,000 unit Ans

2. 2079 Q.No. 7

Sindhu Company has been procuring in a lot size of 1,000 (EOQ) units, material cost per unit is Rs. 20, ordering cost is Rs. 100 and estimated holding cost is 20 percent of unit cost per unit. What is the annual requirement in units? [2]

Ans: 20,000 units

Given,

$$EOQ = 1000 \text{ unit}$$

$$\text{material cost per order} = 4 \cdot 20$$

$$\text{ordering cost (O)} = \text{Rs. } 100$$

$$\begin{aligned} \text{Carrying cost (C)} &= 20\% \text{ of } 20 \\ &= \frac{20}{100} \times 20 \\ &= \text{Rs. } 4 \end{aligned}$$

$$\text{Annual Requirement (A)} = ?$$

Now,

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$\text{or } 1000 = \sqrt{\frac{2 \times A \times 100}{4}}$$

$$\text{or } 1000 = \sqrt{\frac{200A}{4}}$$

$$\text{or } 1000 = \sqrt{50A}$$

Squaring on Both side

$$\text{or } 1000^2 = (\sqrt{50A})^2$$

$$\text{or } 1000000 = 50A$$

$$\therefore A = \frac{1000000}{50}$$

\therefore Annual Requirement is of the Company is 20,000 unit

3. 2078 Q.No. 9

Ans: 20,000 units

Gurash Pvt. Ltd. uses 10,000 units of a product per year on a continuous basis. The product has carrying costs of Rs 20 per unit per year and fixed costs of Rs 1,000 per order. What is its EOQ?

[2]

4. 2077 Q.No. 8

Ans: 1,000 units

solⁿ Given,

Annual Requirement (A) = 10,000 unit
Carrying Cost (C) = Rs. 20 per unit
Ordering Cost (O) = Rs. 1,000
EOQ = ?

$$EOQ = \sqrt{\frac{2AO}{C}}$$

∴ same as 1st =

Tuition Center

Unit 10: Distribution to Shareholders

Formula:

- ① Expected Dividend = Expected net income - Retained Earnings
- ② Expected dividend payout ratio = $\frac{\text{Expected dividend}}{\text{Expected net income}}$ or $\frac{\text{Dividend}}{\text{Net income}}$
- ③ Dividend = Net income - Equity financing for new investment
- ④ MPS after stock dividend = $P_0 \times \frac{1}{1+r}$

1. 2080 Q.No. 7

Mega Company expects next year's net income to be Rs 8 million. The firm's current debt ratio is 60 percent. The company has Rs 10 million of profitable investment opportunities, and it wishes to maintain its existing debt ratio. According to the residual dividend model, how large should company's dividend payout ratio be next year?

Ans: 50%

Sol: Given, Expected Net income = Rs. 8 million

Debt ratio = 60%

New capital budget = 10m

Dividend payout ratio = ?

If company wishes to maintain 60% debt ratio. It has to finance the rest 40% of new capital. New equity financing = $10 \times 40\%$
 $= 10 \times \frac{40}{100}$
 $= 4 \text{ million}$

Expected dividend = Net income - New equity financing
 $= 8m - 4m$
 $= 4m$

Again,
 Expected Dividend payout ratio = $\frac{\text{Expected dividend}}{\text{Expected net income}} = \frac{4 \text{ million}}{8 \text{ million}} = 0.5 \text{ or } 50\%$

2. 2077 Q.No. 10

Ans: 50%

A Company has a target capital structure that consists of 70 percent debt and 30 percent equity. The company anticipates that its capital budget for upcoming year will be Rs 8,000,000. If the company has net income of Rs 5,000,000 and it follows residual dividend payout policy, what will be its dividend payout ratio? [2]

Ans: 52%

3. 2076 Q.No. 9

A company, whose current market price per share is Rs 600, declares 20 percent stock dividend. What will be its market price per share after stock dividend? [2]

Ans: Rs 500

Q.N. 2

Given,

Debt ratio = 70%

Equity ratio = 30%

Amount of capital budget = Rs. 8,000,000

Net income = Rs. 5,00,000

According to residual policy, the firm should maintain target capital structure. This 30% of new capital budget should be financed by equity.

∴ Equity financing for new capital = $8,000,000 \times 30\%$
 $= \text{Rs. } 2,400,000$

Dividend = Net income - Equity financing for new capital
 $= 5,000,000 - 2,400,000$
 $= \text{Rs. } 2,600,000$

Again,

Dividend payout ratio = $\frac{\text{Dividend}}{\text{Net income}}$

$$= \frac{2,600,000}{5,000,000}$$

$$= 0.52 \text{ or } 52\% \text{ Ans}$$

Q.N. 3

Given,

Current market price per share (P_0) = ₹. 600Stock Dividend rate (r) = 20% or 0.20

Now,

The market price per share after stock dividend;

$$\begin{aligned} \text{MPS after stock Dividend} &= P_0 \times \frac{1}{1+r} \\ &= ₹. 600 \times \frac{1}{1+0.20} \\ &= ₹. 500 \end{aligned}$$



Tuition Center

1. 2075 Q.No. 10

Shikhar Company has a target capital structure, which consists of 60 percent debt and 40 percent equity. The company anticipates that its capital budget for the upcoming year will be Rs 1,500,000. If the company reports net income of Rs 1,200,000 and it follows a residual dividend payout policy, what will be the amount of dividend?

[2]

Ans: Rs 600,000

Solⁿ

Debt = 60%

Equity = 40%

Capital budgeting = Rs. 15,00,000

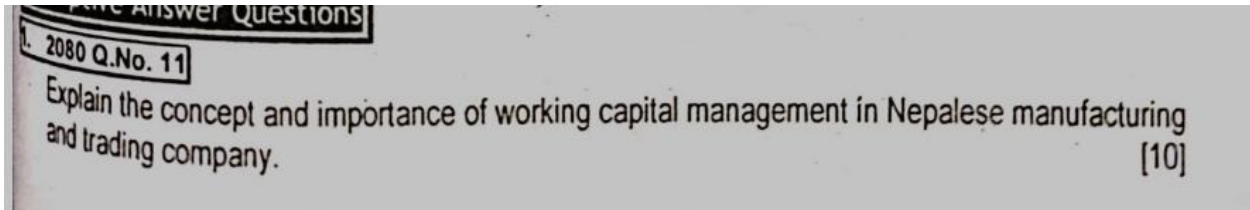
Net income = Rs. 12,00,000

Now,

Equity financing for new capital budget = 40% of 15,00,000
= Rs. 6,00,000

Dividend = Net income - New equity financing
= 12,00,000 - 6,00,000
= Rs. 6,00,000 Ans

Unit 9 Working Capital Management Theory



Working capital management refers to the administration of current assets (like cash, inventory, receivables) and current liabilities (like creditors, short-term borrowings) to ensure smooth day-to-day operations of a business. For Nepalese manufacturing and trading companies, effective working capital management is crucial because it directly affects liquidity, profitability, and the sustainability of the business. कार्यशील पूँजी व्यवस्थापन भन्नाले कुनै कम्पनीले आफ्ना चालु सम्पत्ति (जस्तै नगद, स्टक, लेनदेन उठाउनुपर्ने रकम) र चालु दायित्वहरू (जस्तै ऋण, देनदार) लाई दैनिक व्यवसाय सञ्चालनका लागि प्रभावकारी तरिकाले व्यवस्थापन गर्ने प्रक्रिया हो। नेपालको उत्पादन तथा व्यापारिक कम्पनीहरूको लागि कार्यशील पूँजी व्यवस्थापन अत्यन्तै जरुरी हुन्छ किनकि यसले कम्पनीको तरलता, नाफा कमाउने क्षमता र दीर्घकालीन अस्तित्वमा प्रत्यक्ष असर गर्छ।

Importance of Working Capital Management

- **Ensures Liquidity** – Helps maintain enough cash and assets to pay short-term obligations.
 - **Smooth Production & Trading Operations** – Proper inventory and credit management avoid stock-outs or overstocking.
 - **Improves Profitability** – Reduces unnecessary financing costs and increases return on assets.
 - **Maintains Creditworthiness** – Timely payments to suppliers build goodwill and strong business relationships.
 - **Supports Growth & Expansion** – Adequate working capital ensures that funds are available for business opportunities.
 - **Reduces Financial Risk** – Minimizes chances of insolvency and business failure due to lack of cash flow.
-
- तरलता सुनिश्चित गर्छ – छोटो अवधिका दायित्व पूरा गर्न पर्याप्त नगद र सम्पत्ति उपलब्ध गराउँछ।
 - उत्पादन र व्यापार सहज बनाउँछ – उचित स्टक र ऋण व्यवस्थापनले अभाव वा अत्यधिक भण्डारणको समस्या हटाउँछ।
 - नाफा वृद्धि गर्छ – अनावश्यक वित्तीय खर्च घटाई सम्पत्तिको प्रयोगबाट बढी नाफा कमाउन मद्दत गर्छ।
 - साख कायम राख्छ – आपूर्तिकर्तालाई समयमा भुक्तानी गर्दा विश्वास र राम्रो सम्बन्ध कायम रहन्छ।
 - विकास र विस्तारमा सहयोग गर्छ – पर्याप्त कार्यशील पूँजीले नयाँ अवसरमा लगानी गर्न सहज बनाउँछ।
 - वित्तीय जोखिम घटाउँछ – नगद अभावका कारण हुने व्यवसायिक असफलता वा दिवालियापनको सम्भावना कम गर्छ।

2. 2078 Q.No. 11

Explain the significance of working capital management.

3. 2074 Q.No. 11

Working capital management refers to the efficient administration of a company's current assets (such as cash, accounts receivable, and inventory) and current liabilities (such as accounts payable and short-term debts) in order to maintain a proper balance between liquidity and profitability.

Significance of Working Capital Management

1. Ensures Liquidity

- Working capital management helps a company maintain enough current assets like cash and receivables to meet short-term obligations. Without proper liquidity, even profitable firms may face financial distress.

2. Smooth Business Operations

- By managing inventory, debtors, and creditors effectively, companies can avoid production stoppages, stock shortages, or delayed supply, ensuring smooth trading and manufacturing activities.

3. Improves Profitability

- Efficient use of working capital reduces financing costs, minimizes idle funds, and increases the return on assets, which ultimately improves profitability.

4. Maintains Creditworthiness

- Timely payments to suppliers and creditors help build trust and goodwill. Strong creditworthiness allows the company to get favorable terms on credit purchases and loans.

5. Supports Business Growth and Expansion

- Adequate working capital ensures availability of funds to seize new opportunities, expand production, or enter new markets without liquidity problems.

6. Reduces Financial Risk

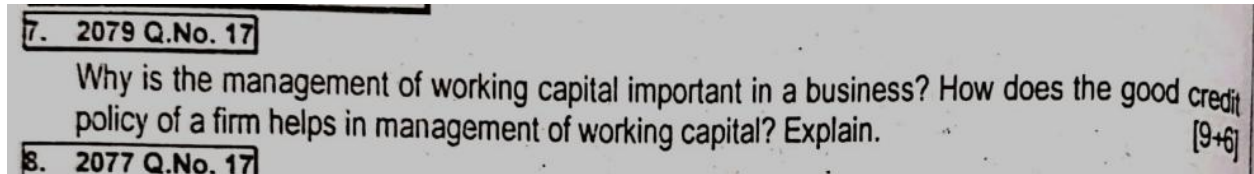
- Proper management minimizes the chances of insolvency, bankruptcy, or business failure by ensuring steady cash flow and timely repayment of obligations.

7. Efficient Utilization of Resources

- Working capital management avoids underutilization or overinvestment in current assets. It ensures that every rupee invested in working capital contributes effectively to business performance.

Types of Working Capital Management

- **Aggressive Working Capital Management**
- **Conservative Working Capital Management**
- **Moderate (or Hedging) Working Capital Management**



The management of working capital is important because it directly affects the liquidity, profitability, and sustainability of a business. Proper control over current assets and current liabilities ensures smooth daily operations, reduces financial risk, and supports business growth.

Importance of Working Capital Management

- **Ensures Liquidity** – Maintains sufficient cash to pay short-term obligations.
- **Smooth Operations** – Prevents production delays and supply chain disruptions.
- **Profitability Improvement** – Avoids idle funds and reduces financing costs.
- **Creditworthiness** – Builds trust with suppliers, creditors, and banks.
- **Business Growth** – Provides funds for expansion and new opportunities.
- **Risk Reduction** – Minimizes the chances of insolvency and bankruptcy.
- **Efficient Resource Utilization** – Ensures proper use of assets without under or over-investment.

How Good Credit Policy Helps in the Management of Working Capital

A good credit policy means providing credit to customers in a balanced way – neither too strict (which reduces sales) nor too liberal (which increases bad debts). It directly helps in the management of working capital in the following ways:

1. **Maintains Cash Flow** – Timely collection of receivables ensures that the company has enough cash to meet its short-term obligations.
2. **Reduces Bad Debts** – A well-framed credit policy sets clear terms, reducing the chances of non-payment.
3. **Improves Liquidity** – Quick collection of dues maintains adequate liquidity in the business.
4. **Supports Sales Growth** – Reasonable credit attracts more customers and increases sales without creating financial problems.
5. **Balances Risk and Profitability** – A good policy maintains a balance between higher sales through credit and the risk of non-collection.
6. **Efficient Working Capital Cycle** – Credit terms aligned with supplier payments ensure smooth cash conversion cycle.

9. 2075 Q.No. 17

What is working capital management? Why is the management of working capital important in a business? Explain the role of cash budget in the management of working capital. [3+6+6]

Role of Cash Budget in the Management of Working Capital

A cash budget is a financial plan that estimates expected cash inflows and outflows during a specific period. It plays a vital role in managing working capital by:

1. **Forecasting Cash Needs** – Helps estimate future cash requirements for smooth operations.
2. **Avoiding Shortages** – Prevents liquidity crises by ensuring timely availability of cash.
3. **Efficient Utilization** – Guides the firm in using surplus funds effectively (e.g., short-term investments).
4. **Controlling Expenditure** – Helps avoid unnecessary spending by setting cash limits.
5. **Improving Credit Position** – Ensures timely payments to suppliers, maintaining goodwill.
6. **Supporting Decision-Making** – Provides reliable data for working capital planning and financing.

Cash Management Theory

1. 2075 Q.No. 17
What are the motives for holding cash?

1. Transaction Motive

- **English:** Cash is needed to carry out routine business transactions such as payment of wages, salaries, rent, interest, and purchase of raw materials.
- **Nepali:** नियमित कारोबार जस्तै तलब, भाडा, ब्याज तिर्न तथा कच्चा पदार्थ किन्न नगद आवश्यक हुन्छ।

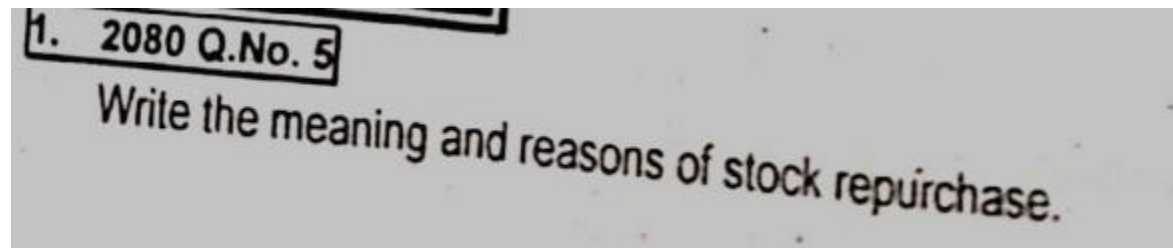
2. Precautionary Motive

- **English:** Firms keep cash as a precaution against unexpected events like sudden price increases, delay in collection from customers, emergencies, or unforeseen expenses.
- **Nepali:** आकस्मिक घटना, अचानक मूल्यवृद्धि, ग्राहकबाट ढिलो असुल, वा आकस्मिक खर्चका लागि सुरक्षितताका हिसाबले नगद राखिन्छ।

3. Speculative Motive

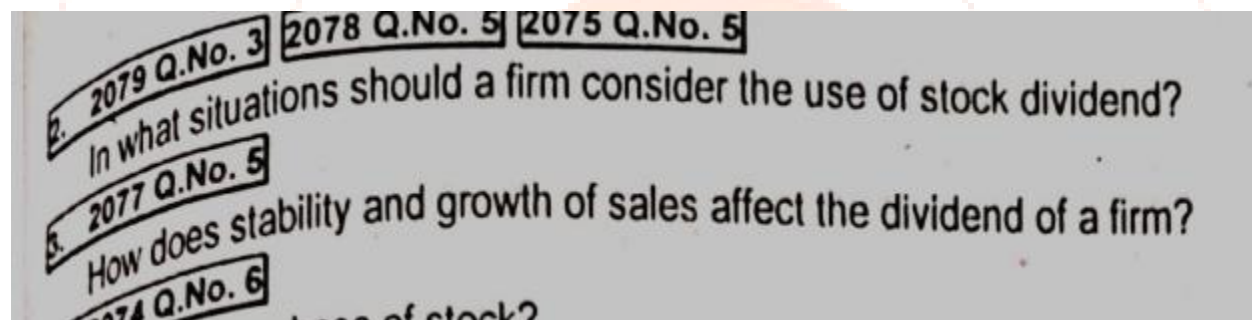
- **English:** Cash is held to take advantage of unexpected profitable opportunities such as purchasing raw materials at a discount, investing in special offers, or taking quick investment decisions.
- **Nepali:** आकस्मिक लाभदायक अवसर (जस्तै छुटमा सामान किन्न, विशेष लगानी अवसर लिन) को फाइदा लिन नगद राखिन्छ।

Unit – 10 Distribution to shareholders Theory Only



Stock repurchase, also known as **share buyback**, refers to the process where a company buys back its own outstanding shares from existing shareholders. The repurchased shares are either canceled or kept as treasury stock. The main objective is to reduce the number of shares in the market, increase earnings per share (EPS), support the share price, and return surplus cash to shareholders.

- Increase Earnings Per Share (EPS):
- Utilization of Surplus Cash:
- Support Share Price & Market Value:



Q,N 2

1. To **preserve cash** for operations or expansion.
2. To **signal confidence** in future growth.
3. To **increase marketability** of shares by lowering per-share price.
4. To **reward long-term shareholders** without cash outflow.
5. To **maintain regular dividend policy** while conserving cash.
6. For **equity restructuring** or adjusting capital structure.
7. To **reduce tax burden** on shareholders (if applicable).

Q.N 3

Effect of Stability and Growth of Sales on Dividend:**1. Stable Sales**

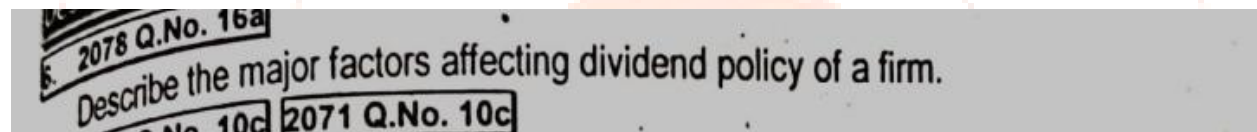
- Firms with **stable sales** can predict profits more reliably.
- They are more likely to **pay regular and consistent dividends**.

2. Growing Sales

- Firms with **growing sales** usually have higher earnings.
- This **increases the capacity to pay higher dividends** or issue special dividends.

3. Volatile Sales

- If sales are unpredictable, firms may **retain earnings** instead of paying dividends to safeguard liquidity.

**Major Factors Affecting the Dividend Policy of a Firm:****1. Profitability of the Firm**

- Higher profits increase the capacity to pay dividends.
- Low or irregular profits may lead to lower or no dividends.

2. Stability and Growth of Earnings

- Firms with stable and growing earnings can maintain regular and predictable dividends.
- Volatile earnings may result in irregular or cautious dividend payments.

3. Cash Flow Position / Liquidity

- Adequate cash is required to pay dividends.
- Firms with liquidity constraints may retain earnings instead of paying cash dividends.

4. Future Investment Plans / Expansion

- Firms with major growth or expansion plans may **retain earnings** to finance projects.
- Dividend payments are reduced if internal financing is needed.

5. Access to Capital Markets

- Firms that can easily raise external funds may pay higher dividends.

- Firms with limited access to funds may retain earnings for reinvestment.

6. Tax Considerations

- Dividend decisions can be influenced by **taxation on dividends** for shareholders.
- Companies may prefer stock dividends in high-tax environments.

7. Legal and Contractual Restrictions

- Companies must follow **company law and loan agreements** which may restrict dividend payments.

8. Shareholder Preferences

- Some shareholders prefer **regular income** (cash dividends), while others may prefer **capital gains** (retained earnings increasing share value).

9. Inflation and Economic Conditions

- During inflation or economic uncertainty, firms may **retain earnings** to protect financial stability.

10. Market Considerations / Signaling Effect

- Dividend changes can **signal management's confidence** about future earnings.

2072 Q.1
Write short notes on dividend payout schemes

Major Schemes:

1. Cash Dividend

- Payment of dividend in **cash**.
- Most common and preferred by shareholders seeking regular income.

2. Stock Dividend (Bonus Shares)

- Payment of dividend in the form of **additional shares** instead of cash.
- Helps conserve cash and rewards shareholders.

3. Property Dividend

- Dividend paid in the form of **assets or property** of the company.
- Rarely used and usually in-kind distribution.

4. Scrip Dividend (Promissory Notes)

- Dividend is paid as a **promise to pay later**, usually when cash is insufficient.

5. Liquidating Dividend

- Dividend paid out of **capital** rather than profits, usually during partial or full liquidation of the company.

2069 Q.No. 09
 Why should firm pay dividend? What are the procedures in dividend payment?

Why Should a Firm Pay Dividend?

1. **Reward Shareholders** – Provides income to shareholders as a return on their investment.
2. **Signal Financial Health** – Regular dividends indicate the firm's **profitability and stability**.
3. **Maintain Investor Confidence** – Encourages **long-term investment** and loyalty.
4. **Share Price Support** – Consistent dividends may help **maintain or increase market price** of shares.
5. **Legal/Contractual Obligation** – Some firms are **legally required** to pay dividends if profits are available.

Procedures in Dividend Payment

1. **Declaration by Board of Directors** – Board recommends dividend amount based on profits and reserves.
2. **Approval in General Meeting** – Shareholders approve dividend in the **Annual General Meeting (AGM)**.
3. **Record Date / Eligibility Date** – Date on which shareholders eligible for dividend are recorded.
4. **Payment of Dividend** – Dividend is **paid in cash, shares, or other forms** as declared.
5. **Filing/Reporting** – Legal and regulatory requirements must be **filed with authorities** if applicable.

Analytical Answer

14. 2074 Q.No. 11

What are the factors influencing dividend policy? Also explain the types of dividend payout schemes. [10+10]

Factors Influencing Dividend Policy

1. **Profitability of the Firm** – Higher profits allow higher dividends; low profits restrict dividend payments.
2. **Stability and Growth of Earnings** – Stable and growing earnings encourage regular dividends; volatile earnings lead to cautious or irregular payments.
3. **Cash Flow Position / Liquidity** – Adequate cash is necessary for paying dividends; liquidity constraints may reduce or delay dividends.
4. **Future Investment Plans / Expansion** – Firms retaining earnings for growth may reduce dividend payouts.
5. **Access to Capital Markets** – Firms with easy access to external funds can afford higher dividends.
6. **Tax Considerations** – Taxation on dividends may affect dividend decisions.
7. **Legal and Contractual Restrictions** – Company laws or loan agreements may limit dividends.
8. **Shareholder Preferences** – Some shareholders prefer cash dividends, others prefer capital gains.
9. **Economic Conditions / Inflation** – Uncertain conditions may lead to retaining earnings.
10. **Market Considerations / Signaling Effect** – Dividend changes can signal management's confidence in future earnings.

Types of Dividend Payout Schemes

1. **Cash Dividend** – Dividend paid in **cash**; most common and preferred by shareholders seeking regular income.
2. **Stock Dividend (Bonus Shares)** – Dividend paid as **additional shares**, conserving cash while rewarding shareholders.
3. **Property Dividend** – Dividend paid in the form of **company assets**; rare in practice.
4. **Scrip Dividend (Promissory Notes)** – Dividend promised to be paid **later**, useful when cash is insufficient.

1. Common Stock (Ordinary Shares)

Definition: Shares representing **ownership in a company**.

Features: Voting rights, dividend after preference shareholders, capital gain opportunity.

2. Preference Stock

Definition: Shares with **fixed dividend paid before common stockholders**.

Features: Fixed return, usually no voting rights, priority in liquidation.

3. Stock Split

Definition: Division of **existing shares into more shares** to reduce per-share price.

Effect: Total capital remains same; per-share market price decreases.

4. Right Share

Definition: Additional shares offered to **existing shareholders at a discounted price**.

Purpose: Maintain proportionate ownership.

5. Declaration of Dividend

Definition: Formal process by which a company **decides to distribute profits to shareholders**.

Procedure: Board recommends → Shareholders approve → Payment made (cash/stock/property).

6. Retained Earnings

Definition: Profits **kept in the business after paying dividends**.

Use: Expansion, debt repayment, reserves.

7. EPS (Earnings Per Share)

Definition: Profit allocated to each share of common stock.

Formula: $EPS = \text{Net Profit} \div \text{Outstanding Shares}$.

8. DPS (Dividend Per Share)

Definition: Dividend paid per share of stock.

Formula: $DPS = \text{Total Dividend} \div \text{Outstanding Shares}$.

9. Additional Paid-Up Capital (Share Premium)

Definition: Amount received **over par value** when shares are issued at premium.

10. Reverse Stock Split

Definition: **Consolidation of shares** to reduce the number of shares.

Effect: Per-share price increases; total capital unchanged.

11. Advantages of Stock Dividend

1. Conserves **cash**.
2. Rewards shareholders without cash outflow.
3. Increases **marketability** of shares.
4. Signals **company growth confidence**.

12. Rules & Regulations of Company (Company Act)

Definition: Legal framework that governs **company operations**.

Key Points:

- Must register with **company registrar**.
- Maintain **statutory books and accounts**.
- Follow **dividend declaration rules**.

- Conduct **AGM/EGM** as required.
- Comply with **share issuance, capital maintenance, and reporting requirements.**

