

Capital Structure

CAPITAL		, Q		PROJECT
	2	Financial	1	
· Ft	n will arrange	manager	· Fm wor	nts to
R:	10,00,000 for	(FM)	invest b	3.10,00,000
I	nvestment.		in proje)C) .
• 11	n which proport	tron	· which p	raject to
(3	tructure mix ro	otro)	107634	•
Rs	10,00,000 should	9d be	· To max	rmize return
Or	ronged.		· Inyestr	nent Decision.
• 1°C	maximise EPS	& መ ኮሪ		
• <u>Ca</u>	ipita structur	<u>e</u> .		
	<u> </u>			
E	5C × \ 5	ructure or	proportion	
Ρ	3C x) 0	F Rs. 10,00	,000 will be	deaded
06	ebt *	in this cl	nopter to ma	ximire Eps & mp
cobi	1000,000			
* Format:				
	tatement:		Options	
Particul	Ors		<u> </u>	<u>3</u>
EBIT				
- Interest				
EBT				
- Tax				
FAT				
- Preference	e Dividend			
NP FOR E	SH			
- NO OF E	5			
EPS				
x PE Ratio				
MPS				



13 min

Suppose that a firm has an

Question 11. (Illustration 11)

Suppose that a firm has an all equity capital structure consisting of 1,00,000 ordinary shares of $\ref{thm:prop}$ 10 per share. The firm wants to raise $\ref{thm:prop}$ 2,50,000 to finance its investments and is considering three alternative methods of financing – (i) to issue 25,000 ordinary shares at $\ref{thm:prop}$ 10 each, (ii) to borrow $\ref{thm:prop}$ 2,50,000 at 8 per cent rate of interest, (iii) to issue 2,500 preference shares of $\ref{thm:prop}$ 100 each at an 8 per cent rate of dividend. If the firm's earnings before interest and taxes after additional investment are $\ref{thm:prop}$ 3,12,500 and the tax rate is 50 per cent, FIND the effect on the earnings per share under the three financing alternatives.

Income statement:

		Options	
Portraiors	1	2	<u> </u>
EBIT	002516	002516	312500
- In 1 6194	_	(२०,०००)	-
FBT	002618	494500	312500
-Tox @ SO%	(126420)	(146250)	(156720)
EAT	156450	146250	126320
- Pref. Div	_	_	(20,000)
H23 101 9N	156920	146250	026981
: NO OF ES (100,000+New)	÷125000	÷100,000	÷100,000
EPS	1.25	1.46	1.36

Decision: Optron 2 should be selected to maximize EPs.

(WN-1): CODITOU STRUCTURE: (350,000)

PUFFICUIORS		 _	<u></u>	_
ESC (10)	250,000			
8% D6Pt		000,025		
87. P3C			250,000	

NEW:

(10	Eqw.+u	3hores	45000

(250,000+10)

250,000

b) Interest 20,000

(520,000 48%)

20,000

c) Pref. Dividend 20,000

(\$20,000 x8%)

250,000



17 min

A 6 4 4 6 6 1

Best of Luck Ltd., a profit

Question 12. (Illustration 12)

Best of Luck Ltd., a profit making company, has a paid-up capital of ₹ 100 lakhs consisting of 10 lakhs ordinary shares of ₹ 10 each. Currently, it is earning an annual pre-tax profit of ₹ 60 lakhs. The company's shares are listed and are quoted in the range of ₹ 50 to ₹ 80. The management wants to diversify production and has approved a project which will cost ₹ 50 lakhs and which is expected to yield a pre-tax income of ₹ 40 lakhs per annum. To raise this additional capital, the following options are under consideration of the management:

- (a) To issue equity share capital for the entire additional amount. It is expected that the new shares (face value of ₹ 10) can be sold at a premium of ₹ 15.
- (b) To issue 16% non-convertible debentures of ₹ 100 each for the entire amount.
- (c) To issue equity capital for ₹ 25 lakhs (face value of ₹ 10) and 16% non- convertible debentures for the balance amount. In this case, the company can issue shares at a premium of ₹ 40 each.

ADVISE which option is the most suitable to raise the additional capital, keeping in mind that the management wants to maximize the earnings per share to maintain its goodwill. The company is paying income tax at 50%.

Income statement:

	prions	
	2	<u> </u>
100,00,000	100,00,000	100,00,000
_	(8,000,000)	(4,00,000)
100,000,000	9200,000	9600,000
(50,00,000)	(4600,000)	(4800,000)
50,000	4600,000	4800,000
_	_	_
50,000,000	4600,000	4800,000
÷1200,000	÷10,00,000	÷1090,000
4.17	4.6	4.57
	1 100,00,000 - 100,00,000 (50,00,000 - 50,00,000 ÷1200,000	- (8,00,000) 100,00,000 9200,000 (50,00,000) (4600,000) 50,00,000 4600,000

<u>Decision</u>: Option 2 should be selected to maximize EPS.

(WN-1): CODITON STRUCTURE: (50,00,000)

Portroulors		<u>~</u>	<u> </u>
Esc	50,00,000 (15)	2500,000 (50)
16% Debenture		50,00,000	200,000
	90,00,000	000,000	000,000
NEW: No of shores	200,000	_	50,000
Inferest	~	800,000	400,000



16 min Shahji Steel Limited requires

Question 13. (Illustration 13)

Shahji Steel Limited requires ₹ 25,00,000 for a new plant. This plant is expected to yield earnings before interest and taxes of ₹ 5,00,000. While deciding about the financial plan, the company considers the objective of maximizing earnings per share. It has three alternatives to finance the project - by raising debt of ₹ 2,50,000 or ₹ 10,00,000 or ₹ 15,00,000 and the balance, in each case, by issuing equity shares. The company's share is currently selling at ₹ 150 but is expected to decline to ₹ 125 in case the funds are borrowed in excess of ₹ 10,00,000. The funds can be borrowed at the rate of 10 percent upto ₹ 2,50,000, at 15 percent over ₹ 2,50,000 and upto ₹ 10,00,000 and at 20 percent over ₹ 10,00,000. The tax rate applicable to the company is 50 percent. ANALYSE which form of financing should the company choose?

Income statement:

	Options .		
	2	<u>_</u>	
500,000	500,000	500,000	
(45000)	(137500)	(237500)	
475000	367500	२ ६२ ८००	
(237500)	(181250)	(131250)	
२३७५००	025181	025161	
-	-	_	
<i>₹</i> 37500	025181	131250	
÷ 15000	÷10,000	÷8000	
15.83	18.13	16.41	
	(45000) 475000 (237500) 237500 - 237500 ÷ 15000	500,000 500,000 (45000) (137500) 475000 367500 (237500) (181250) 237500 181750 	1 2 3 3 1 1 1 1 1 1 1 1

<u>Decision</u>: option 2 should be selected to maximise EPS

(WN-1): CODITOU STRUCTURE: (2500,000)

Pottrculors		_	<u>_</u>
Debt (Borrowed)	250,000	10,00,000	1500,000
EJC	2220000	1500,000	10,000,000
	2500000	200,000	000,002 \$
NEW: 0) NO OF ES:	15000	10,000	8000
	(2250,000÷150)	(1500,000+150)	$(261 \div 000,000)$



wnz): Ini	<u> </u>			
	D6P+			
Upto	250,000	10%		
		000 15%		
	10,00,000.			
001100	2 \$0,000 × 10%	= 25000		
	<u> </u>			
OPTION 2:	250,000 × 10%.	· 92000		
	750,000×157.	2 119200		
	10,00,000	137500		
			•	
option 3:	350,000 x 10%	2 2000		
	750,000 × 15%	002511 =		
	500,000 × 20%	, 100,000		
	000,0021	237500 .		



Ganapati Limited is considering

Question 18. (PP4)

Ganapati Limited is considering three financing plans. The key information is as follows:

- (a) Total investment to be raised is ₹ 2,00,000.
- (b) Plans of Financing Proportion:

Plans	Equity	Debt	Preference Shares
Α	100%	-	-
В	50%	50%	-
С	50%	-	50%

(c)	Cost of debt	8%	
	Cost of preference shares	8%	
_ (d)	Tax rate	50%	

- (e) Equity shares of the face value of ₹ 10 each will be issued at a premium of ₹ 10 per share.
- (f) Expected EBIT is ₹ 80,000.

You are required to DETERMINE for each plan:

- (i) Earnings per share (EPS)
- (ii) The financial break-even point
- (iii) Indicate if any of the plans dominate and compute the EBIT range among the plans for indifference.

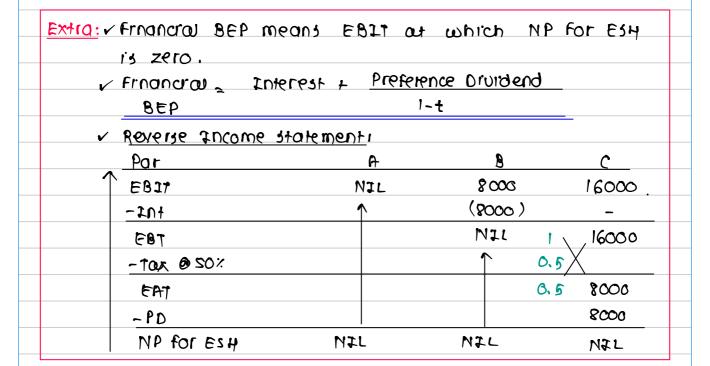
1. Income statement: (EPS)

	<u>Options</u>				
Porticulors	A	<u> </u>			
EBIT	80,000	80,000	80,000		
-1141614		(8000)	~		
EBT	80,000	72000	80,000		
-Tax @ SO%	(40,000)	(36000)	(40,000)		
EAT	40,000	36000	40,000		
- Pref. Div	_	~	(8000)		
NP for ESH	40,000	36 <i>00</i> 0	- 32000		
÷ No of Es	÷10,000	÷5000	÷ 5000		
EPS	4	7.2	6.4		

Decision: option B should be selected to maximise EPS

Potticulors	<u>%</u>	1	<u>%</u>	<u> </u>	<u>%</u>	<u> </u>
E3C	100 20	20,000	50	100,000	50	100,000
8%D6P+		-	50	100,000		
8x P3C					50	100,000
	100 20	00000	00	२०००००	100	200,000
NEW: 0) NO OF ES	10,	.000		5000		5000
b) Interest				8000		
c) Preference Divi	dend					8000

2. Frnancia BEP:



Frnancia Interest + Preference Dividend

8EP 1-t

Plan A = NIL

Plan B = 8000 + 0 = 8000

Planc = 0 + 8000 = 16000.

1-0.5

3. Indifference Point:

EXTIG:

Indifference Point means amount of EBIT at which EPS under both options is same.

EPS = (EBIT-Interest) (1-t) - Preference Dividend

No of Es.

a) Indifference point between A & B:

$$\frac{\text{EP3 under Plan B}}{(\text{EBIT-0})(1-0.5)-0} = \frac{\text{EP3 under Plan B}}{(\text{EBIT-8000})(1-0.5)-0}$$

b) Indifference Point between A & C:



c) Indifference Point between B & C:

EPS under Plan B = EPS under Plan C (EBIT-8000) (1-0.5) - 0 (EBIT-0) (1-0.5) - 8000 5000

0.5EBIT - 4000 = 0.5EBIT - 8000

: There is no indifference point between Plan B & C.

Plan B dominates Plan c:

Reasons:

- a) Plan B has higher EPS in comparison to Plan c
- b) Plan B has lower financial BEP in comparison to Planc



Aaina Ltd. is considering

Question 15. (PP1)

Aaina Ltd. is considering a new project which requires a capital investment of ₹ 9 crores. Interest on term loan is 12% and Corporate Tax rate is 30%. CALCULATE the point of indifference for the project considering the Debt Equity ratio insisted by the financing agencies being 2 : 1.

Assumed: 1st Plan was all equity.

share price = Rs.10

(WN4): COPITOU STRUCTURE:

Patriculars	1	ર	
12% Debt		600,00,000	5 5
Esc	900,00,000	300,00,000	<i>š</i> 1
	900,00,000	900,00,000	3
NEW: 0) NO OF ES (ESC +10)	90,00,000	30,00,000	
b) Inferest	~	7200,000	

J. Indifference Point:



Question 16. (PP2)

Xylo Ltd. is considering two alternative financing plans as follows:

Η.	Particulars	Plan - A (₹)	Plan - B (₹)		
_	Equity shares of ₹10 each	8,00,000	8,00,000		
	Preference Shares of ₹ 100 each	_	4,00,000		
Γ.	12% Debentures	4,00,000	_		
		12,00,000	12,00,000		

The indifference point between the plans is ₹ 4,80,000. Corporate tax rate is 30%. CALCULATE the rate of dividend on preference shares.

1. Rate of Preference Dividend

$$\frac{1}{200000} = \frac{33600}{4000000} \times 100 = \frac{8.4\%}{100}$$



Ganesha Limited is setting up a project with

Question 17. (PP3)

Ganesha Limited is setting up a project with a capital outlay of ₹ 60,00,000. It has two alternatives in financing the project cost.

Alternative-I: 100% equity finance by issuing equity shares of ₹ 10 each Alternative-II: Debt-equity ratio 2:1 (issuing equity shares of ₹ 10 each)

The rate of interest payable on the debts is 18% p.a. The corporate tax rate is 40%. CALCULATE the indifference point between the two alternative methods of financing.

(WN+): COprtal Structure: (60	(000,000	
Porticulors		<u>_</u>
ESC (10)	60,00,000	1 20,00,000
18% D6Pt		2 40,00,000
	60,00,000	3 60,00,000
NEW: 0) NO OF ES (ESC+10)	600,000	200,000
D) Interest		720,000
		(4°20),000 × 18",)

1. Indifference Point:

EBIT = 1080,000.



Alpha Limited requires funds

Question 20. (PP6)

Alpha Limited requires funds amounting to ₹ 80 lakh for its new project. To raise the funds, the company has following two alternatives:

- (i) To issue Equity Shares of ₹ 100 each (at par) amounting to ₹ 60 lakh and borrow the balance amount at the interest of 12% p.a., or
- (ii) To issue Equity Shares of ₹ 100 each (at par) and 12% Debentures in equal proportion.

The Income-tax rate is 30%.

IDENTIFY the point of indifference between the available two modes of financing and state which option will be beneficial in different situations.

(WN-1): Capital Structure: (80,00,000)

<u>Particulars</u>	<u>Plani</u>	Pion 2	
Esc	60,000,000	40,00,000	
12% Debt	26,00,000	40,00,000	
	000,000,08	80,00,000	
NEW: 0) NO OF ES (ESC÷100)	60,000	40,000	
b) Interest	240,000	480,000	

1. Indifference Point:



9)	70	cama	Sta	ha m	ant.
~		~(1)	וכטווופ	וטידכ	101	2117:

	EBIT = 950,000		<u> FBIT</u>	= 970,000
Particulars	Plani	Plan 2	Plan I	Pion 2
EBIT	9 50,000	950,000	970,000	970,000
-Interest	(२५०,०००)	(480,000)	(२५०,०००)	(480,000)
EBT	710,000	470,000	730,000	490,000
-Tax 6 30%	(213000)	(141000)	(२१९०००)	(147000)
NP for ESH	497000	३ २,9०००	511000	343000
+ NO OF ES	÷60,000	÷40,000	÷60,000	÷40,000
EP3	8.48	8.53	8.52	8.58

Range : Preferred Plan

Below Indifference Point : Plan 1 (lower Inf + PD)

At Indifference Point ! Pion 1 or Pion 2

Above Indifference Point : Plan 2 (Higher Int + PD)



Yoyo Limited presently has ` 36,00,000

Question 19. (PP5)

Yoyo Limited presently has ₹ 36,00,000 in debt outstanding bearing an interest rate of 10 per cent. It wishes to finance a ₹ 40,00,000 expansion programme and is considering three alternatives: additional debt at 12 per cent interest, preference shares with an 11 per cent dividend, and the issue of equity shares at ₹ 16 per share. The company presently has 8,00,000 shares outstanding and is in a 40 per cent tax bracket.

- (a) If earnings before interest and taxes are presently ₹ 15,00,000, DETERMINE earnings per share for the three alternatives, assuming no immediate increase in profitability.
- (b) ANALYSE which alternative do you prefer. COMPUTE how much would EBIT need to increase before the next alternative would be best.

<u>s) :</u>	Options	
	<u> </u>	<u> </u>
1500,000	1900,000	1500,000
(840,000)	(360,000)	(360,000)
660,000	1140,000	1140,000
(२६४०००)	(456000)	(456000)
396000	684000	684000
-	(440,000)	~
396000	244000	684000
÷ 800,000	÷ 800,000	÷1050,000
0.495	0.305	0.661
	1 1500,000 (840,000) 660,000 (264000) 396000 - 396000 ÷800,000	1500,000 1500,000 (840,000) (360,000) (660,000 1140,000) (264000) (456000) 396000 684000 - (440,000) 396000 2440000 +800,000

<u>Decision</u>: option 3 should be accepted.

(WN-1): Copital Struct	<u>ure:</u> (40,00,000)		
Porticulors		<u></u>	<u>_</u>
12% Debt	40,00,000		
11% PSC		40,00,000	
E3C (16)			40,00,000
	40,00,000	49,00,000	40,00,000
NEW: 0) NO OF ES (40,	,00,000÷16)		20,000
b) 2016167+	480,000		
c) Pref. Drv		440,000	



```
2. i) After option 3 next best option is option 1
 ii) Indifference Point:
      FPS under Option 1 = EPS under option 3
    (EBIT-840,000)(1-0.4) (EBIT-360,000)(1-0.4)
          200,000
                             1050,000
                     1.3125
    (0.6 EBIT - 504000) x 1050,000 = (0.6 EBIT - 216000)
      -800,000-1
     0.7875 FBIT - 661500 = 0.6 EBIT - 216000
      0.7875 EBIT-0.6 EBIT= 661500-216000
           0.1875 EBIT = 445500
                 EBIT = 23,76,000.
 iii) If Ebit is
       Below 2376000 = Option3 (10w Int & PD)
         At 2376000 = option 1 or 3
      Above 2376000 = option 1 (High Int & PD)
 iv) At present option 3 is better when EBIT is Rs.1500,000.
    IF EBIT rncreases by Rs. 876000 (2376000-1500,000)
    then option I will be better.
```



40 min

The following data are presented in respect

Question 14. (Illustration 14)

The following data are presented in respect of Quality Automation Ltd.:

	(₹)
Profit before interest and tax	52,00,000
Less: Interest on debentures @ 12%	12,00,000
Profit before tax	40,00,000
Less: Income tax @ 50%	20,00,000
Profit After tax	20,00,000
No. of equity shares (of ₹ 10 each)	8,00,000
EPS	2.5
PE Ratio	10
Market price per share	25

The company is planning to start a new project requiring a total capital outlay of ₹ 40,00,000. You are informed that a debt equity ratio (D/D+E) higher than 35%, pushes the Ke up to 12.5%, means reducing the PE ratio to 8 and rises the interest rate on additional amount borrowed to 14%. FIND OUT the probable price of share if:

- (i) the additional funds are raised as a loan.
- (ii) the amount is raised by issuing equity shares. (Note: Retained earnings of the company is ₹ 1.2 crore)

1. Income Statement:

Porticulors	14% Debt	<u>Esc</u>	
EBIT	589२२०७	58 92200	
- Interest (1200,000 + Nexy)	(1760,000)	(1200,000)	
EBT	4132200	4692200	
-Tax @ Sor.	(२०६६००)	(2346100)	
EAT/NP FOR ESH	4066100	2346100	
- NO OF E3 (800,000 + New)	÷ 800,000	÷960,000	
EP3	२, ५ ८	२. ४ ५	
x pe rotio	x &	×10	
m P S	२०.६५	24.44	
		·	

Decision: EP3 13 higher under option 1 but
mp3 13 higher under option 2

.: Option 2 (Equity) should be selected.

Particulars:	14% Debt	Esc
a) Deb+:		
Old: 12% Deb+ (121 ÷ 12%)	100,00,000	100,00,000
New: 14% Debt	40,00,000	-
, // - \ -	0) 140,00,000	100,00,000
b) <u>Fqw'ty:</u>		
Old: E3C (81×10)	000,000,08	80,00,000
Retorning Earning	120,00,000	120,00,000
NEW: ESC		40,00,000
	6) २००,००,०००	240,00,000
e) Debt + Equity: (a+b)	340,00,000	340,00,600
d) <u>Debt Equity Ratio</u>	41.18%	२१.41%
Ded+ ×100	(140L × 100)	(100L × 100)
Debt+Equity	340L	340L (100)
e) PE Ratio	8	10
	(93 Dept equity	(as Debt equity
	ratio more than	ratio less than
	35%)	35%)
F) <u>NEW:</u>		
NO OF ES	-	160,000 (40L÷25)
10461624	560,000	
ONED: REVISED EBIT:		
o) Return on	NDG	
	Dept + Edmith	
100	5200,000 DL+ (80L+120L)	17.33%
b) rexised EBZT = (3001.	+40L) × 17.33%	
	12200	



Axar Ltd. has a Sales of

Question 24. (PP10)

Axar Ltd. has a Sales of ₹ 68,00,000 with a Variable cost Ratio of 60%.

The company has fixed cost of ₹16,32,000. The capital of the company comprises of 12% long term debt, ₹ 1,00,000 Preference Shares of ₹ 10 each carrying dividend rate of 10% and 1,50,000 equity shares.

The tax rate applicable for the company is 30%.

At current sales level, DETERMINE the Interest, EPS and amount of debt for the firm if a 25% decline in Sales will wipe out all the EPS.

-25%

Solution:

Income statement:						
Particulais	original	DEP	<u>Present level</u>			
3a1e3	100 6800,000 -25	√ √ √ √ √ √ √ √ √ √ √ √ √ √ √ √ √ √ √	6800,000			
- Vc	60 4080,000	(3060,000)	4080,000			
contribution	40 2720,000	२०4 <i>०,०</i> ००	٥٥٥,٥٥٥			
-FC	(1632000)	(1632000)	(1632000)			
EBIT	1088000	408000	1088000			
- Interest		393714	(393714)			
<u></u>		14486	694486			
-Tax @30%		0.3 4286	(२०८२८६)			
EAT		0.7 10,000	486000			
-Prefory	(10,000)	(10,000)	(0,000)			
H23 107 9M		~	476000			
+No of Es	+150,000	+ 150,000	÷150,000			
EPS		~	3.17			

- 1. Interest: 393714
- 2. EPS: 3.17
- 3. Amount of Debt: 393714 3280950.