

CHP - 4

MERGERS AND ACQUISITION

Years	May		Nov	
	RTP	Paper	RTP	Paper
2008	NA	NA	Yes	Yes co.
2009	Yes	Yes	Yes	Yes
2010	Yes	Yes	Yes	Yes
2011	Yes	Yes	Yes	Yes
2012	Yes	Yes	Yes	Yes
2013	Yes	Yes	Yes	Yes
2014	Yes	Yes	Yes	Yes
2015	Yes	Yes	Yes	Yes
2016	Yes	Yes	Yes	No
2017	No	Yes	Yes	Yes
2018 (Old)	Yes	Yes	Yes	Yes
2018 (New)	Yes	Yes	Yes	Yes
2019 (Old)	No	Yes	No	No
2019 (New)	Yes	Yes	No	No

2008

Question 1

Nov 2008 RTP

XYZ Ltd., is considering merger with ABC Ltd. XYZ Ltd.'s share are currently traded at Rs.20. It has 2,50,000 shares outstanding and its earnings after taxes (EAT) amount to Rs.5,00,000. ABC Ltd., has 1,25,000 shares outstanding :its current market price is Rs.10 and its EAT are Rs.1,25,000 the merger will be effected by means of a stock swap (exchange). ABC Ltd., has agreed to a plan under which XYZ Ltd., will offer the current market value of ABC Ltd.'s shares:

1. What is the pre – merger earning per share (EPs) and P/E ratio of both the companies?
2. If ABC Ltd.' P/E ratio 6.4, what is the current market price? What is the exchange ratio? What will XYZ Ltd.'s post – merger EPS be?
3. What should be the exchange ratio; if XYZ Ltd.'s pre – merger and post merger EPS are to be the same?

Solution :

	Particulars	XYZ	ABC
A	Earning After Tax	5,00,000	1,25,000
B	No of Shares	2,50,000	1,25,000
C	EPS (A/B)	2	1
D	Market Price	20	10
E	P.E. Ratio (D/C)	10	10

1) Pre merger PE and EPS of both the companies : Calculated Above

2) If ABC Ltd P.E Ratio is 6.4

i) Current Market Price = EPS x PE = 1 x 6.4 = 6.4

ii) Swap Ratio (Based on Market Price) = $\frac{\text{Target Company}}{\text{Acquiring Company}} = \frac{6.4}{20} = 0.32$

iii) EPS of the Merged Firm

Total Earnings

XYZ Ltd.	5,00,000	
ABC Ltd.	<u>1,25,000</u>	6,25,000

$$\text{EPS} = \frac{6,25,000}{2,90,000} = 2.155$$

Total No

XYZ Ltd	2,50,000	
ABC Ltd	<u>40,000</u>	2,90,000
	(1,25,000 x 0.32)	

3) Exchange Ratio if the pre-merger and the post merger EPS of XYZ is to be same
For Pre and Post merger EPS to be same, the exchange ratio should be based in EPS

Swap Ratio(Based on EPS) = $\frac{\text{Target Company}}{\text{Acquiring Company}} = \frac{1}{2} = 0.5$

Check

Total Earnings

XYZ Ltd.	5,00,000	
ABC Ltd.	<u>1,25,000</u>	6,25,000

$$\text{EPS} = \frac{6,25,000}{3,12,500} = 2 \quad \text{-- Proved}$$

Total No

XYZ Ltd	2,50,000	
ABC Ltd	<u>62,500</u>	3,12,500
	(3,12,500 x 1)	

Question 2

Nov 2008 RTP

ABC Ltd. is intending to acquire XYZ Ltd .by merger and the following information is available in respect of the companies :

Particulars	ABC Ltd	XYZ Ltd
Number of equity shares	10,00,000	6,00,000
Earning after tax (Rs.)	50,00,000	18,00,000
Market value per shares (Rs.)	42	28

Required:

1. What is the EPS of both Companies?
2. If the proposed merger takes place, What would be the new earning per share for ABC Ltd.? Assume that the merger takes place by exchange of equity shares and the exchange ratio based on the current market price.
3. What should be exchange ratio, if XYZ Ltd. wants to ensure the earning to member are as before the merger takes place?

Solution :

- 1) EPS of both the companies

	Particulars	ABC Ltd	XYZ Ltd
A	Earnings After Tax	50,00,000	18,00,000
B	No of Shares	10,00,000	6,00,000
C	Earnings per share (A/B)	5	3
D	Market Price per share	42	28

- 2) Earnings Per Share of Merged Firm
Swap Ratio (Based on Market Price)
= Target Company/Acquiring Company
= $28/42$
= 0.67 i.e. $2/3^{\text{rd}}$

Total Earnings

ABC Ltd.	50,00,000	
XYZ Ltd.	<u>18,00,000</u>	68,00,000

$$\text{EPS} = \frac{68,00,000}{14,00,000} = 4.86$$

Total No

ABC Ltd	10,00,000	
XYZ Ltd	<u>4,00,000</u>	14,00,000
	(6,00,000 x 0.67)	

- 3) Exchange Ratio so that the shareholders for XYZ Ltd would not be at loss
For the shareholders not to suffer any loss, the Swap ratio should be based on EPS
Swap Ratio(Based on EPS Price) =
= Target Company/Acquiring Company
= $3/5$
= 0.6

CheckEarnings Per Share of Merged Firm

$$\text{EPS} = \frac{68,00,000}{13,60,000} = 5$$

Total Earnings

ABC Ltd.	50,00,000	
XYZ Ltd.	<u>18,00,000</u>	68,00,000

Equivalent EPS for XYZ $= 5 \times 0.6 = 3$ Proved

Total No

ABC Ltd	10,00,000	
XYZ Ltd	<u>3,60,000</u>	13,60,000
	(6,00,000 x 0.6)	

Question 3

Nov 2008 Paper – 12 Marks

K LTD. is considering acquiring N. LTD., the following information is available:

Company	Profit after tax	Number of Equity Shares	Market value per Share
K. Ltd.	50,00,000	10,00,000	200
N. Ltd.	15,00,000	2,50,000	160

Exchange of equity shares for acquisition is based on current market value as above. There is no synergy advantage available:

- Find the earning per share for company K. Ltd after merger.
- Find the exchange ratio so that shareholders of N. Ltd. would not be at a loss.

Solution :

	Particulars	K Ltd	N Ltd
A	Earnings After Tax	50,00,000	15,00,000
B	No of Shares	10,00,000	2,50,000
C	Earnings per share (A/B)	5	6
D	Market Price per share	200	160

- Earnings Per Share of Merged Firm
Swap Ratio(Based on Market Price)
= Target Company/Acquiring Company
= $160/200$
= 0.8

Total Earnings

K Ltd.	50,00,000	
N Ltd.	<u>15,00,000</u>	65,00,000

$EPS = 65,00,000/12,00,000 = 5.42$

Total No

K Ltd	10,00,000	
N Ltd	<u>2,00,000</u>	12,00,000
	(2,50,000 x 0.8)	

- Exchange Ratio so that the shareholders for N Ltd would not be at loss
For the shareholders not to suffer any loss, the Swap ratio should be based on EPS

Swap Ratio(Based on EPS Price) =
 = Target Company/Acquiring Company
 = 6/5
 = 1.2

Check

Earnings Per Share of Merged Firm Total
 Earnings

K Ltd. 50,00,000
 N Ltd. 15,00,000 65,00,000

$$\text{EPS} = 65,00,000 / 13,00,000 = 5$$

Total No

K Ltd 10,00,000
 N Ltd 3,00,000 13,00,000
 (2,50,000 x 1.2)

$$\begin{aligned} \text{Equivalent EPS for N} \\ = 5 \times 1.2 = 6 \text{ proved} \end{aligned}$$

2009**Question 4****May 2009 RTP**

X Ltd. is intending to acquire Y Ltd .by merger and the following information is available in respect of the companies :

Particulars	X Ltd	Y Ltd
Number of equity shares	4,00,000	2,00,000
Earning after tax (Rs.)	8,00,000	3,00,000
Market value per shares (Rs.)	30	15

Required:

1. What is the EPS and P.E Ratio of both the companies both Companies?
2. If the exchange ratio is the market price of the share, what will be the post – merger EPS?
3. What should be exchange ratio, if XYZ Ltd. wants to ensure the earning to member are as before the merger takes place?

Solution :

- 1) EPS and PE Ratio of both the companies

		X Ltd	Y Ltd
A	Earnings After Tax	8,00,000	3,00,000
B	No of Shares	4,00,000	2,00,000
C	Earnings per share (A/B)	2 per share	1.5 per share
D	Market Price per share	30	15
E	P.E. Ratio (D/C)	15 times	10 times

- 2) Earnings Per Share of Merged Firm

Swap Ratio(Based on Market Price)
 = Target Company/Acquiring Company
 = 15/30
 = 0.5

Total Earnings

K Ltd. 8,00,000
 N Ltd. 3,00,000 11,00,000

$$\text{EPS} = \frac{11,00,000}{5,00,000} = 2.2$$

Total No

K Ltd 4,00,000
 N Ltd 1,00,000 5,00,000
 (2,00,000 x 0.5)

- 3) Exchange Ratio so that the shareholders for Y Ltd would not be at loss For the shareholders not to suffer any loss, the Swap ratio should be based on EPS

Swap Ratio (Based on EPS Price)
 = Target Company/Acquiring Company
 = 1.5/2
 = 0.75

Check

Earnings Per Share of Merged Firm

Total Earnings

X Ltd. 8,00,000
 Y Ltd. 3,00,000 11,00,000

$$\text{EPS} = 11,00,000/5,50,000 = 2$$

$$\text{Equivalent EPS for Y} \\ = 2 \times 0.75 = 1.5 \text{ Proved}$$

Total No

ABC Ltd 4,00,000
 XYZ Ltd 1,50,000 5,50,000
 (2,00,000 x 0.75)

Question 5

May 2009 – RTP

R Ltd is considering taking over S Ltd for better synergy in marketing the product. The information for both the companies are as follows

	R Ltd.	S Ltd.
EAT	30	12
Equity shares (in Lakhs)	10	6
EPS	3	2
P.E. Ratio	10	5

Required :

1. What is the market value of each firm before merger?
2. Management of R Ltd. assumes that the management of S Ltd. will accept offer of one share of R Ltd. for 3 share of S Ltd. What will be the post merger Market value of R Ltd?
3. What is the gain from the merger in terms of market value of the merger firm?
4. What will be the gain of shareholders of R Ltd. in terms of share price?

Solution :

1. Market value of each firm before merger.

		R Ltd	S Ltd
A	No of Shares	10	6
B	Earnings per share	3	2
C	P.E.Ratio	10	5
D	Market Price Per share (b x c)	30	10
E	Market Value of each Firm (d x a)	300 Lakhs	60 Lakhs

2. No of shares to be issued to the shareholders of S Ltd. = $6,00,000 / 3 = 2,00,000$

Total No of shares (Lakhs) = 12 Lakhs

Total earnings Rs. in Lakhs = $30 + 12 = 42$ Lakhs

Therefore Post merger EPS = $42 / 12 = \text{Rs. } 3.5$ per share

P.E Ratio = 10

M.P.S (EPS x PE) = Rs. 35 Per share Market

Value (MPS x No) = $35 \times 12 = \text{Rs. } 420$ Lakhs

3. Gain in terms of market value from merger

Pre Merger Market Value 360

Post Merger Market Value 420

60

4. Gain for shareholders of R

Post merger Value of shares of R Ltd = $2 \times 35 = \text{Rs. } 70$ Lakhs

Pre merger Value of shares of R Ltd = 60 Lakhs

Gain for the shareholders of R Ltd = 10 Lakhs

% Gain = $16.67\% (10/60 \times 100)$

Question 6

May 2009 – RTP

X Ltd. made an attempt to acquire Y Ltd. Following information is available for both the companies

	X Ltd.	Y Ltd.
Price per share	30	20
P/E Ratio	5	4
No of shares (Lakhs) (F.V.10)	3	2
Reserves and Surplus	30	20
Promoters holding	1.2	0.75

Board of directors of both the companies have decided that a workable swap ratio is to be based on

weights of 30%, 30% and 40% respectively for Earnings, Book Value and Market Price of share of each company.

Required.

1. Swap Ratio
2. After merger, promoters holding
3. Post merger EPS
4. Gain in capital market value of merged, assuming Price Earning ratio will remain same.

Solution :

		X Ltd.	Y Ltd.
(A)	MPS	30	20
(B)	P/E Ratio	5	4
(C)	EPS (A/B)	6	5
(D)	No. of Shares	3	2
(E)	F.V.	10	10
(F)	Share Capital (D × E)	30	20
(G)	Reserves and Surplus	30	20
(H)	Net Worth (f + y)	60	40
(I)	B.V./Sh. (H/D)	20	20
(J)	PAT (C × D)	18	10
(K)	Promoters holding	1.2	0.75

- 1) Swap Ratio = Target Co / Acquiring Co.

$$\text{EPS} = 5/6 = 0.83 \times 30\% = 0.25$$

$$\text{BV} = 20/20 = 1 \times 30\% = 0.30$$

$$\text{MPS} = 20/30 = 0.67 \times 40\% = \frac{0.27}{0.817}$$

- 2) Post Merger Promoters Holding

Total No.

$$\begin{array}{r} \text{X} \\ \text{Y}(2 \times 0.817) \end{array} \quad \begin{array}{r} 3 \\ \underline{1.634} \end{array} \quad \begin{array}{r} \\ 4.634 \end{array}$$

Promoters holding

$$\begin{array}{r} \text{X} \\ \text{Y}(0.75 \times 0.817) \end{array} \quad \begin{array}{r} 1.2 \\ \underline{0.61275} \end{array} \quad \begin{array}{r} \\ 1.81275 \end{array}$$

$$\text{Promoter holding} = \frac{1.81275}{4.634} = 39.12\%$$

- 3) Post Merger EPS

Total Earnings

$$\begin{array}{r} \text{X Ltd.} \\ \text{Y Ltd.} \end{array} \quad \begin{array}{r} 13 \\ \underline{10} \end{array} \quad \begin{array}{r} \\ 23 \end{array}$$

Total No.

$$\text{EPS} = \frac{28}{4.634} = \text{Rs.6.04/Sh.}$$

4) Gain in Capital Market Value

Pre Merger Market Capitalisation

X (3 × 30)	90	
Y (2 × 20)	<u>40</u>	130

Post Merger Market Capitalisation

$$(4.634 \times 6.04 \times 5) \quad 140$$

$$\therefore \text{Gain} = 140 - 130 = 10 \text{ lakh}$$

Question 7**May 2009 Paper – 20 Marks**

The following information relating to the acquiring Company Abhiman Ltd and the target Company Abhishek Ltd. are available. Both the companies are promoted by Multinational company, Trident Ltd. The promoter's holding is 50% and 60% respectively in Abhiman Ltd and Abhishek Ltd:

	Abhiman Ltd	Abhishek Ltd
Share Capital (Rs.)	200 lakh	100 lakh
Free Reserves and surplus (Rs.)	800 lakh	500 lakh
Paid up value per share (Rs.)	100	10
Free float market capitalization (Rs.)	500 lakh	156 lakh
P/E Ratio (times)	10	4

Trident Ltd. is interested to do justice to the shareholder of both Companies. For the swap ratio weights are assigned to different parameters by the Board of Directors as follows:

Book value	25%
EPS (Earning per share)	50%
Market Price	25%

- What is the swap ratio based on above weights?
- What is the book value, EPS and expected Market price of Abhiman Ltd
- After acquisition of Abhishek Ltd. (assuming P>E ratio of Abhiman Ltd remains unchanged and all assets and liabilities of Abhishek Ltd. are taken over at book value).
- Calculate:
 - promoter's revised holding in the Abhiman Ltd.
 - free float market capitalization.
 - Also calculate No. share . Earning per share (EPS) and book value (B.V) if after acquisition of Abhishek Ltd., Abhiman Ltd., decided to:
 - Issue Bonus share in the ratio of 1 : 2 ; and
 - Split the stock (share) as Rs.5 each fully paid.

Solution :

	Particulars	Abhiman Ltd	Abhishek Ltd
A	Share Capital	200 lakhs	100 lakhs

B	Free Reserves and Surplus	800 lakhs	500 lakhs
C	Net Worth	1000 lakhs	600 lakhs
D	Paid up Value per share	100	10
E	No of shares (A/D)	2 lakhs	10 lakhs
F	B.V (Net worth / No)	500	60
G	Promoters Holding	50%	60%
H	Free float Market Capitalization	400	128
I	Total Market Capitalization	800	320
J	MPS (Market Cap / No.)	400	32
K	PE Ratio	10	4
L	EPS (MPS / PE)	40	8
M	Net Profit After Tax (EPS x No)	80	80

1) Swap Ratio

Basis	Abhiman	Abhishek			Swap
BV	500	60	60 / 500	0.12×0.25	0.03
EPS	40	8	8 / 40	0.2×0.5	0.1
MPS	400	32	32 / 400	0.08×0.25	0.02
Total					0.15

2) EPS of the Merged Firm Total Earnings

Abhiman Ltd.	80	
Abhishek Ltd	<u>80</u>	160

$$\text{EPS} = 160/3.5 = 45.71$$

Total No

Abhiman Ltd	2	
Abhishek Ltd	<u>1.5</u>	3.5

(10 x 0.15)

3) BV of shares = $1600/3.5 = 457.14$

4) Market Price Per share = $\text{EPS} \times \text{PE} = 45.71 \times 10 = \text{Rs. } 457.1$

Market Capitalization = $457.1 \times 3.5 = 1600$ lakhs

5) Promoters Holding in Abhiman Ltd

	Post Merger
Total Shares	3.5 [(2 + (10 x 0.15))]
Promoters	1.9[1 + (60 % of 10 x .15)]

Promoters holding = $1.9/3.5 \times 100 = 54.29\%$

6) Free Float Market Capitalization

Free Float Capital = $100 - 54.29\% = 45.71\%$

i.e $1600 \times 45.71\% = 731.36$

7) Revised EPS and BV after Bonus and Share split

Total no of shares in before bonus and split = 3.5

Bonus = 1 : 2

$$\text{i.e. } \frac{3.5 \times 1}{2}$$

= 1.75, so now the total no of shares after bonus will $3.5 + 1.75 = 5.25$ Stock Split into shares of Rs.5 each i.e 1 share of share = 20 shares of 5

i.e $5.25 \times 20 = 105$ lakhs

Revised EPS = $160/105 = 1.523$ per share

Revised BV= $1600/105 = 15.238$ per share

Question 8 Nov 2009 RTP – Similar to - Question 3 : Nov 2008 Paper – 12 Marks

Question 9 Nov 2009 RTP – Similar to - Question 2 : Nov 2008 RTP

Question 10 Nov 2009 Paper – 10 Marks

You have been provided the following Financial data of two companies:

	Krishna Ltd.	Rama Ltd.
Earnings after taxes	Rs. 7,00,000	Rs. 10,00,000
Equity shares (outstanding)	Rs. 2,00,000	Rs. 4,00,000
EPS	3.5	2.5
P/E ratio	10 times	14 times
Market price per share	Rs. 35	Rs. 35

Company Rama Ltd. is acquiring the company Krishna Ltd., exchanging its shares on a one-to-one basis for company Krishna Ltd. The exchange ratio is based on the market prices of the shares of the two companies.

Required:

- What will be the EPS subsequent to merger?
- What is the change in EPS for the shareholders of companies Rama Ltd. and Krishna Ltd.?
- Determine the market value of the post-merger firm. PE ratio is likely to remain the same.
- Ascertain the profits accruing to shareholders of both the companies.

Solution :

		Krishna Ltd	Rama Ltd
A	Earning After Tax	7,00,000	10,00,000
B	No of Shares	2,00,000	4,00,000
C	EPS (A/B)	3.5	2.5
D	P.E. Ratio	10	14
E	Market Price per share	35	35

Note : Swap ratio is given as 1

- EPS of the Merged Firm Total

Earnings

Krishna Ltd. 7,00,000

Rama Ltd. 10,00,000 17,00,000

$$\text{EPS} = 17,00,000/6,00,000 = 2.83$$

Total No

Krishna Ltd 2,00,000
(2,00,000 x 1)

Rama Ltd 4,00,000 6,00,000

2) Change in EPS for shareholder of companies Rama and Krishna Ltd

	Krishna	Rama Ltd
Pre Merger EPS	3.5	2.5
Post Merger EPS	<u>2.83(2.83 × 1)</u>	<u>2.83</u>
Gain / (Loss)	(0.67)	0.33
% Gain / (Loss)	(19.14%)	13.2%

3) Market Value of Post Merged Firm = EPS x PE = 2.83 x 14 = 39.62/share

4) Profit / Loss to the shareholder of both the companies

	Krishna	Rama Ltd
Pre Merger MPS	3.5	3.5
Post Merger MPS	<u>39.62</u>	<u>39.62</u>
Gain	4.62	4.62
Gain %	13.2%	13.25

2010

Question 11

May 2010 Paper – 16 Marks

T Ltd and E Ltd are in the same industry. The former is in negotiation for acquisition of the latter. Important information about the two companies as per their latest financial statement is given below:

	T Ltd	E Ltd.
Rs.10 Equity share outstanding	12 Lakhs	6 lakhs
Debt :		
10% Debentures (Rs.Lakhs)	580	--
12.5% institutional Loan(Rs.Lakhs)	--	240
Earning before interest, depreciation and tax (EBIDAT) (Rs.Lakhs)	400.86	115.71
Market Price / share(Rs.)	220	110

T Ltd. plans to offer a price for E Ltd., business as whole which will be 7 times EBIDATE reduced by outstanding debt, to be discharged by own shares at market price.

E Ltd planning to seek one share in T Ltd. For every 2 shares in E Ltd. based on the market price. Tax rate for the two companies may be assumed as 30%

Calculate and show the following under both alternatives – T Ltd offer and E Ltd.' plan:

1. Net consideration payable.
2. No. of share to be issued by T Ltd.
3. EPS of T Ltd. after acquisition.
4. Expected market price per share of T Ltd. after acquisition.

5. State briefly the advantage to T Ltd. from the acquisition.
Calculation (except EPS) may be rounded off to 2 decimals lakhs.

Solution :

		T Ltd	E Ltd.
A	Rs.10 Equity share	12 Lakhs	6 lakhs
B	10% Debentures	580 lakhs	--
C	12.5% Loans	--	240
D	Earnings before Interest and Tax	400.86	115.71
E	Interest	58	30
F	Earnings before tax (D - E)	342.86	85.71
G	Tax (30% of F)	102.86	25.71
H	Earnings after Tax (F - G)	240	60
I	EPS (Earnings/No)	20	10
J	MPS	220	110
K	PE Ratio (MPS/EPS)	11	11

Alternative 1 : T Limited's Plan

$$7 \text{ times EBIDAT of E Ltd} = 115.71 \times 7 = 809.97$$

$$\text{Less Debt} = \underline{240} \\ 569.97$$

$$\text{Discharge by Shares} = \frac{569.64}{220} = 2,59,077 \text{ shares}$$

- 1) Consideration Payable = 569.97 lakhs
- 2) No of shares to be issued by T Ltd = 2,59,077 shares
- 3) EPS of T Ltd After Acquisition

Total Earnings

T Ltd. 240

E Ltd 60 300

$$\text{EPS} = 300/14.79077 = 20.28929$$

Total No

T Ltd 12

V Ltd 2.59077 14.79077

- 4) Expected Market Price after acquisition = $\text{EPS} \times \text{PE} = 20.2829 \times 11 = 223.1119$
- 5) Advantage to T Ltd after merger = $223.1119 - 220 = 3.1119$

Alternative 2 : E Ltd's PlanSwap Ratio as given = $1/2 = 0.5$

- 1) No of shares to be issued by T Ltd. = $6 \times 0.5 = 3$ lakhs
- 2) Net consideration Payable = $3 \times 220 = 660$ lakhs
- 3) EPS of T Ltd After Acquisition

Total Earnings

T Ltd.	240	
E Ltd	<u>60</u>	300

$$\text{EPS} = 300/15 = 20$$

Total No

T Ltd	12	
V Ltd	<u>3</u>	15

- 4) Expected Market Price after acquisition = $\text{EPS} \times \text{PE} = 20 \times 11 = 220$
- 5) Advantage to T Ltd after merger = There will be no change in market value, as the Exchange is Infact based on MPS.

Question 12 Nov 2010 RTP – Similar to Question 18 - May 2011 Paper**Question 13** Nov 2010 RTP – Similar to Question 11 - May 2010 RTP**Question 14** Nov 2010 Paper – Similar to Question 3 : Nov 2008 Paper**2011****Question 15** May 2011 RTP

The market value of two companies Sun Ltd. and Moon Ltd. are Rs.175 lac and Rs.75 lac respectively. The share capital of Sun Ltd. consists of 3.5 lac Rs.10/- ordinary shares and that of Moon Ltd. consist of 2.2 lac ordinary shares of Rs. 10/- each

Sun Ltd. is proposing to takeover Moon Ltd. The pre-merger earnings are Rs.19 lac for Sun Ltd. and Rs.10 lac for Moon Ltd. The merger is expected to result into a synergy gains of Rs.4 lac in the form of Post tax cost savings. The

Pre-merger P/E Ratios are 10 for Sun Ltd. and 8 for Moon Ltd. The possible combined P/E Ratios are 9 and 10.

You are required to calculate.

- Minimum combined P/E ratio to justify the merger assuming swap ratio of?
- Exchange ratio of shares if combined P/E ratio is 9.
- Exchange ratio of shares if combined P/E ratio is 10.

Solution :

(i) Total Earnings after merger (Rs.19 Lakhs + Rs.10 Lakhs)	= Rs. 29 Lakhs
Add : Synergy Effect	= Rs. 4 Lakhs
Post Merger Earnings	= Rs. 33 Lakhs
Total No of shares in the Merged Entity	5.7 Lakhs (3.5 + 2.2)
EPS After Merger (Earnings / No)	= Rs. 5.79 per share
Market Price Per share before merger	= 175 / 3.5
	= Rs. 50 per share
Minimum P.E.Ratio to justify Merger	= 50 / 5.79

= 8.64 times

(ii) Let X be the no of shares issued after mergers

$$\text{The New EPS} = \frac{33}{3.5 + x}$$

If the P .E Ratio is 9 then the Market price per share after merger

$$\frac{33 \times 9}{3.5 + x} = \frac{297}{3.5 + x}$$

Since Market price share is 50

$$\text{Thus, } \frac{297}{3.5 + x} = 50$$

Therefore X = 2.44 Lakhs

(iii) If the P .E Ratio is 10 then the Market price per share after merger

$$\frac{33 \times 10}{3.5 + x} = \frac{330}{3.5 + x}$$

Since Market price share is 50

$$\text{Thus, } \frac{330}{3.5 + x} = 50$$

Therefore X = 3.1 Lakhs

Question 16**May 2011 Paper – 8 Marks**

Abhiman Ltd is a subsidiary of Janam Ltd is acquiring Swabhiman Ltd. Which is also a subsidiary of Janam Ltd. The following information is given:

	Abhiman Ltd.	Swabhiman Ltd.
% Shareholding of promoter	50%	60%
Share capital	Rs.200lacs	100 lacs
Free Reserves and surplus	Rs.900lacs	600 lacs
Paid up value per share	Rs.100	10
Free float market capitalization	Rs.500lacs	156 lacs
P/E Ratio (times)	10	4

Janam Ltd., is interested in doing justice to both companies. The following parameters have been assigned by the board of Janam Ltd., for determining the swap ratio:

Book value	25%
Earning per share	50%
Market price	25%.

You are required to compute

1. The swap ratio.

The book value, Earning per share and Expected Market price of Swabhiman Ltd.,(assuming P/E Ratio of Abhiman Ltd remains the same and all assets and liabilities of Swabhiman Ltd. are taken over at book value.)

Solution :

	Particulars	Abhiman Ltd	Swabhiman Ltd
A	% Shareholding of Promoters	50%	60%
B	Share Capital	200	100
C	Free Reserves and Surplus	900	600
D	Net Worth	1100	700
E	Paid up value per share	100	10
F	No of shares (B / E)	2 lacs	10 lacs
G	B.V (Net worth / No)	550	70
H	Free float Market Cap	500 lacs	156 lacs
I	Total Market Capitalization	1000 lacs	390 lacs
J	MPS (Market Cap / No)	500	39
K	PE Ratio	10	4
L	EPS (MPS / PE)	50	9.75
M	Earnings After Tax	100 lacs	97.5 lacs

1) Swap Ratio

Basis	Abhiman Ltd.	Swabhiman Ltd			Swap
BV	550	70	70/550	$0.1273 \times 25\%$	0.031825
EPS	50	9.75	9.75/50	$0.195 \times 50\%$	0.097500
MPS	500	39	39/500	$0.078 \times 25\%$	0.019500
Total					0.148825

2) EPS of the Merged Firm Total Earnings

Abhiman Ltd.	100	
Swabhiman Ltd	<u>97.5</u>	197.5

$$\text{EPS} = 197.5 / 3.48825 = 56.62$$

Total No		
Abhiman Ltd	2	
Swabhiman Ltd	1.48825	= 3.48825
	(10 x 0.148825)	

3) BV of shares = $1800 / 3.48825 = 516.02$

4) Market Price Per share = $\text{EPS} \times \text{PE} = 56.62 \times 10 = 566.20$

Question 17**May Paper 2011 – 8 Marks**

Simple Ltd. and Dimple Ltd. are planning to merge. The total value of the companies are dependent on the fluctuating business condition. The following information is given for the total value (debt + equity) structure of each of the two companies.

Business Condition	Probability	Simple Ltd.	Dimple Ltd
		Rs.Lacs	Rs.Lacs
High Growth	0.20	820	1050
Medium Growth	0.60	550	825
Slow Growth	0.20	410	590

The current debt of Dimple Ltd. is Rs.65 lacs and of simple Ltd. is Rs.460 lacs. Calculate the expected

value of debt and equity separately for the merged entity.

Solution :**W.N.1 : Simple Limited**

	High Growth	Medium Growth	Slow Growth
Total	820	550	410
Debt	460	460	410 – Cant pay debt above M.V
Equity	360	90	Nil

Dimple Limited

	High Growth	Medium Growth	Slow Growth
Total 1050	1050	825	590
Debt	65	65	65
Equity	985	760	525

Value of Debt and Equity for Merged Entity Equity

$$\text{Simple Limited} = 360 \times 0.2 + 90 \times 0.6 + \text{Nil} \times 0.2 = 126$$

$$\text{Dimple Limited} = 985 \times 0.2 + 760 \times 0.6 + 525 \times 0.2 = \underline{758}$$

$$\text{Total} = 884$$

Debt

$$\text{Simple Limited} = 460 \times 0.2 + 460 \times 0.6 + 410 \times 0.2 = 450$$

$$\text{Dimple Limited} = 65 \times 0.2 + 65 \times 0.6 + 65 \times 0.2 = \underline{65}$$

$$\text{Total} = 515$$

Question 18**Nov 2011 RTP**

There are two companies ABC Ltd. and XYZ Ltd. are in same in industry. On order to increase its size ABC Ltd. made a takeover bid for XYZ Ltd.

Equity beta of ABC and XYZ is 1.2 and 1.05 respectively. Risk Free Rate of Return is 10% and Market Rate of Return is 16%. The growth rate of earnings after tax of ABC Ltd. in recent years has been 15% and XYZ's is 12%. Further both companies had continuously followed constant dividend policy.

Mr. V, the CEO of ABC requires information about how much premium above the current market price to offer for XYZ's shares.

Two suggestions have forwarded by merchant bankers.

- Price based on XYZ's net worth as per B/S, adjusted in light of current value of assets and estimated after tax profit for the next 5 years.
- Price based on Dividend Valuation Model, using existing growth rate estimates.

(Rs.In lacs)

	ABC	XYZ		ABC Ltd.	XYZ Ltd.
Equity Share Capital	2,000	1,000	Land & Building	5,600	1,500
General Reserves	4,000	3,000	Plant & Machinery	7,200	2,800
Share Premium	4,200	2,200			
Long Term Loans	5,200	1,000			

Current Liabilities			Current Assets		
Sundry Creditors	2,000	1,100	Accounts	3,400	2,400
Bank Overdraft	300	100	Receivable	3,000	2,100
Tax Payable	1,200	400	Stock	200	400
Dividend Payable	500	400	Bank/Cash	-	-
	19,400	9,200		19,400	9,200

Profit and Loss Account of both the companies

	ABC Ltd.	XYZ Ltd.		ABC Ltd.	XYZ Ltd.
To Net Interest	1,200	220	By Net Profit	7,000	2,550
To Taxation	2,030	820			
To Distributable Profit	3,770	1,510		-	-
	7,000	2,550		7,000	2,550
To Dividend	1,130	760	By Distributable Profit	3,770	1,510
To Balance c/d	2,640	750		-	-
	3,770	1,510		3,770	1,510

Additional information

- (1) ABC Ltd.'s land & building have been recently revalued. XYZ Ltd.'s have not been revalued for 4 years, and during this period the average value of land & building have increased by 25% p.a.
 - (2) The face value of share of ABC Ltd. is Rs.10 and of XYZ Ltd. is Rs.25 per share.
 - (3) The current market price of shares of ABC Ltd. is Rs.310 and of XYZ Ltd.'s Rs.470 per share.
- With the help of above data and given information you are required to calculate the premium per share above XYZ's current share price by two suggested valuation methods. Discuss which of these two values should be used for bidding the XYZ's shares.

State the assumptions clearly, you make

Solution :

A. Net Assets Method

To compute the value of shares as per this method we shall compute the Net Assets.

- (i) Value of Land & Building of XYZ Ltd. = $1,500 \text{ lac} \times (1.25)^4 = \text{Rs.}3,662.11 \text{ lac}$ Thus, net asset value will be:

	Rs.
Land & Building	3,662.11 lac
Plant & Machinery	2,800.00 lac
Account Receivable	2,400.00 lac
Stock	2,100.00 lac
Bank/Cash	<u>400.00 lac</u>
	11,362.11 lac
Less: Bank Overdraft	100.00 lac
Sundry Creditors	1,100.00 lac

Tax Payable	400.00 lac
Dividend Payable	400.00 lac
Long Term Loan	<u>1,000.00 lac</u>
	<u>8362.11 lac</u>

- (ii) Estimated profit for next 5 years
 = Rs.1,510 lac (1.12) + Rs.1,510 lac (1.12)² + Rs.1,510 lac (1.12)³ + Rs.1,510 lac (1.12)⁴ + Rs.1,510 lac (1.12)⁵
 = Rs. 1,691.20 lac + Rs. 1,894.14 lac + Rs. 2,121.44 lac + Rs. 2,376.01 lac + Rs. 2,661.14 lac = Rs. 10,743.93 lac.

- (iii) The total yield value = Rs. 8,362.11 lac + Rs. 10,743.93 lac = Rs. 19,106.04 lac
 XYZ Ltd.s share's current market value = Rs.470 × 40 lacs shares = Rs.1,88,00,00,000 = Rs. 18,800 lac

The premium is thus Rs. 306.04 lac (Rs. 19,106.04 lac – Rs. 18,800 lac) i.e. Rs. 7.65 per share or 1.63% [7.65/470].

This is not a sound basis for valuation as it ignores the time value of money. The premium of 1.63% above the current market price is very small compared to those achieved in many real bids.

B. Dividend Valuation Mode

$$P_0 = \frac{D_1}{K_e - g} = \frac{D_0(1+g)}{K_e - g}$$

$$D_0 = \frac{760 \text{ lac}}{40 \text{ lac}} = \text{Rs.19 per share}$$

$$\text{Thus } D_1 = \text{Rs. 19 (1+0.12)} = \text{Rs.21.28}$$

Ke using CAPM

$$K_e = R_f + \beta_j (R_m - R_f) = 10\% + 1.05(16\% - 10\%) = 16.3\%$$

$$P_0 = \frac{\text{Rs.21.28}}{16.3\% - 12\%} = \frac{\text{Rs.21.28}}{4.3\%} = \text{Rs.494.88 per share}$$

The premium is Rs.24.88 (Rs.494.88 – Rs.470) i.e. 5.29% above the current market price. Thus, this method should be used for bidding shares of XYZ Ltd.'s share

Question 19

Nov 2011 Paper – 8 Marks

MK Ltd. is considering acquiring NN Ltd. The following information is available:

Company	Earning after Tax (Rs.)	No. of Equity shares	Market value per share (Rs.)
MK Ltd.	60,00,000	12,00,000	200
NN Ltd.	18,00,000	3,00,000	160

Exchange of equity shares for acquisition is based on current market value as above. There is no synergy advantage available.

- Find the earning per shares for company MK Ltd. after merger, and
- Find the exchange ratio so that shareholder for NN Ltd. would not be at a loss.

Solution :

		MK Ltd	NN Ltd
A	Earnings After Tax	60,00,000	18,00,000
B	No of Shares	12,00,000	3,00,000
C	Earnings per share (A/B)	5	6
D	Market Price per share	200	160

1) Earnings Per Share of Merged Firm

Swap Ratio (Based on Market Price) = Target Company/Acquiring Company

$$= 160/200$$

$$= 0.8$$

Total Earnings

MK Ltd.	60,00,000	
NN Ltd.	<u>18,00,000</u>	78,00,000

$$\text{EPS} = 78,00,000/14,40,000 = 5.42$$

Total No

MK	12,00,000	
NN Ltd	<u>2,40,000</u>	14,40,000

$$(3,00,000 \times 0.8)$$

2) Exchange Ratio so that the shareholders for NN Ltd would not be at loss For the shareholders not to suffer any loss, the Swap ratio should be based on EPS

Swap Ratio (Based on EPS Price) = Target Company/Acquiring Company

$$= 6/5$$

$$= 1.2$$

Check

Earnings Per Share of Merged Firm

Total Earnings

MK Ltd.	60,00,000	
NN Ltd	<u>18,00,000</u>	78,00,000

$$\text{EPS} = 78,00,000/14,40,000 = 5$$

Total No

MK Ltd	12,00,000	
NN	<u>3,60,000</u>	15,60,000

$$(3,00,000 \times 1.2)$$

$$\text{Equivalent EPS for NN} = 5 \times 1.2 = 6 \text{ Proved}$$

2012**Question 20****May 2012 RTP**

AXE Ltd. is interested to acquire PB Ltd. AXE has 50,00,000 shares of Rs.10 each, which are presently being quoted at Rs.25 per share. On the other hand PB has 20,00,000 share of Rs.10 each currently selling at Rs.17. AXE and PB have EPS of Rs.3.20 and Rs.2.40 respectively.

You are required to:

- Show the impact of merger on EPS, in case if exchange ratio is based on relative proportion of EPS.
- Suppose, if AXE quote an offer of share exchange ratio of 1:1, then should PB accept the offer or not, assuming that there will be no change in PE ratio of AXE after the merger.
- The maximum ratio likely to acceptable to management of AXE.

	AXE Ltd.	PB Ltd.
NO	50,00,000	20,00,000
MPS	25	17
GPS	3.20	2.40
PAT	1,60,00,000	48,00,000
PE Ratio	7.8125	2.4

Solution :

- Exchange Ratio = $2.4 / 3.2 = 0.75$ Total Earnings

Earning of AXE Ltd. = Rs. $3.20 \times 50,00,000 = \text{Rs. } 1,60,00,000$

Earning of PB Ltd. = Rs. $2.40 \times 20,00,000 = \text{Rs. } 48,00,000$

Combined earnings after merger = Rs. $2,08,00,000$

Total No

Total No. of shares to be issued to PB Ltd. $0.75 \times 20,00,000 = 15,00,000$

Existing No. of Shares of AXE Ltd. = $50,00,000$

$65,00,000$

EPS after Merger (Total Earnings / Total No) = Rs. 3.20 Per share Statement of Impact of Merger

	AXE Ltd.	PB Ltd.
EPS before merger	3.20	2.40
EPS after merger (Equivalent in case of PB Ltd.)	3.20	2.40

Thus, there is will be no change in EPS for shareholder of both companies

- No. of shares to be issued to AB Ltd. (1:1) 20,00,000

	AXE Ltd.	PB Ltd.
EAT (Rs.) (A)	1,60,00,000	48,00,000
No. of Shares (B) EPS (A)/(B)	50,00,000	20,00,000

Position after Merger

A.	EAT After Merger (160 + 48) Lakhs	2,08,00,000
B.	No of shares (20 + 50 Lakhs)	70,00,000
C.	EPS After Merger (A/B)	2.97 per share
D.	P.E.Ratio of the Merged Company	7.8125
E.	MPS (C × D)	23.21 per share
F.	Market Value of Merged Firm (MPS x No)	1624.70
G	Gain from Merger [1624.7 – 1250 - 340]	34.70

Gain to Shareholders of PB Ltd.

	Rs. in lakh
Post Merger Value of PB Ltd (20,00,000 × Rs.23.21)	464.20
Less: Pre Merger Value	340.00
Gain to Shareholders of PB Ltd.	124.20

Thus PB Ltd. should accept the offer

(c) Maximum share ratio acceptable to AXE Ltd.

	Rs. in lakhs
Total market value of merged entity	1625
Less: Minimum value acceptable to AXE Ltd. Post merger value of PB Ltd.	1250
Since post merger value of PB Ltd. remains unchanged, thus Rs.25 (MPS) to remain intact	375
Thus, number of equity shares to be issued to PB Ltd. (375/25)	15,00,000
Existing number of share of PB Ltd.	20,00,000
Share exchange ratio	0.75 : 1

Question 21

May 2012 Paper

LMN Ltd is considering merger with XYZ Ltd. LMN Ltd's shares are currently traded at Rs.30.00 per share. It has 3,00,000 shares outstanding. Its earnings after taxes (EAT) amount to Rs.6,00,000. XYZ Ltd has 1,60,000 shares outstanding and its current market price is Rs.15.00 per share and its earnings after taxes (EAT) amount to Rs.1,60,000. The merger is decided to be effected by means of a stock swap (exchange). XYZ Ltd has agreed to a proposal by which LMN Ltd will offer the current market value of XYZ Ltd's shares.

Find out:

- (i) The pre-merger earnings per share (EPS) and price/earnings (P/E) ratios of both the companies.
- (ii) If XYZ Ltd's P/E Ratio is 9.6, what is its current Market Price? What is the Exchange Ratio? What will LMN Ltd's post-merger EPS be?
- (iii) What should be the exchange ratio, if LMN Ltd's pre-merger and post-merger EPS are to be the same?

Solution :

Similar to - Question 1 : Nov 2008 RTP

Question 22

Nov 2012 RTP

Reliable Industries Ltd. (RIL) is considering a takeover of Sunflower Industries Ltd. (SIL) the Particulars of 2 companies are given below:

Particulars	Reliable Industries Ltd	Sunflower Industries Ltd
Earning After Tax (EAT)	Rs.20,00,000	Rs.10,00,000
Equity share o/s	10,00,000	10,00,000
Earning per share (EPS)	2	1
P E Ratio (Times)	10	5

Required:

1. What is the market value of each Company before merger?
2. Assume that the management of RIL estimates that the shareholder of SIL will accept an offer of one share of RIL for four shares are no synergic effects, what is the market value of the Post- merger RIL? What is the price per share? Are the shareholder of RIL better or worse off than they were before the merger?
3. Due to synergic effects, the management of RIL estimates that the earning will increase by 20% what are the new post – merger EPS and price per share? Will the shareholder better off than be for the merger?

Solution :

		Reliable	Sunflower
A	Earnings After Tax	20,00,000	10,00,000
B	Equity Shares	10,00,000	10,00,000
C	Earning per share	2	1
D	PE Ratio	10	5
E	MPS	20	5
F	Market Value	2,00,00,000	50,00,000

- 1) Market Value of Each Company – Calculated Above
- 2) Exchange Ratio 1 : 4 i.e swap Of 0.25 EPS of Reliable Ltd After Acquisition

Total Earnings

Reliable Ltd.	20,00,000	
Sunflower	<u>10,00,000</u>	30,00,000

$$\text{EPS} = 30,00,000 / 12,50,000 = 2.4$$

Total No

Reliable	10,00,000	
Sunflower	<u>2,50,000</u>	12,50,000

(10,00,000 x 0.25)

$$\text{Market Price} = \text{EPS} \times \text{PE} = 2.4 \times 10 = 24$$

Gain in the share price = 24 – 20 = Rs. 4 per share, i.e 20%

- 3) Due to Merger the Earnings will increase by 20% EPS of Reliable Ltd After Acquisition

Total Earnings

Reliable Ltd.	20,00,000	
Sunflower	<u>10,00,000</u>	30,00,000 + 20% = 36,00,000

$$\text{EPS} = 36,00,000 / 12,50,000 = 2.88$$

Total No

Reliable	10,00,000	
Sunflower	<u>2,50,000</u>	12,50,000

(10,00,000 x 0.25)

$$\text{Market Price} = \text{EPS} \times \text{PE} = 2.88 \times 10 = 28.8$$

Gain in the share price = $28.8 - 20 = \text{Rs. } 8.8$ per share, i.e 44%

Question 23

Nov 2012 Paper

Yes Ltd. wants to acquire No Ltd. and the cash flows of Yes Ltd. and the merged entity are given below.

Year	(Rs. in lakhs)				
	1	2	3	4	5
Yes Ltd	175	200	320	340	350
Merged Entity	400	450	525	590	620

Earnings would have witnessed 5% constant growth rate without merger and 6% with merger on account of economies of operations after 5 years in each case. The cost of capital is 15%.

The number of shares outstanding in both the companies before the merger is the same and the companies agree to an exchange ratio of 0.5 shares of Yes Ltd. for each share of No Ltd.

PV factor at 15% for years 1-5 are 0.870, 0.756; 0.658, 0.572, 0.497 respectively.

You are required to:

- Compute the Value of Yes Ltd. before and after merger.
- Value of Acquisition and
- Gain to shareholders of Yes Ltd.

Solution :

- Working Notes:

Present Value of Cash Flows (CF) upto 5 years

Year End	CF of Yes Ltd. (Rs. lakhs)	PVF @15%	PV of CF (Rs. lakhs)	CF of Merged Entity	PV of CF of Merged Entity (Rs. lakhs)
1	175	0.87	152.25	400	348
2	200	0.756	151.2	450	340.2
3	320	0.658	210.56	525	345.45
4	340	0.572	194.48	590	337.48
5	350	0.497	173.95	620	308.14
			882.44		1679.27

PV of Cash Flows of Yes Ltd. after the forecast period.

$$TV_5 = CF_5 \frac{(1+g)}{ke-g} = 350(1+0.05)/0.15-0.05$$

$$= 367.50/0.10$$

$$= \text{Rs.}3675 \text{ lakhs}$$

PV of $TV_5 = \text{Rs.}3675 \text{ lakhs} \times 0.497 = \text{Rs.}1826.475 \text{ lakhs}$

PV of Cash Flows of Merged Entity after the forecast period.

$$TV_5 = CF_5 \frac{(1+g)}{ke-g} = 620(1+0.06)/0.15-0.06$$

$$= 657.20/0.09$$

= Rs.7302.22 lakhs

PV of TV5 = Rs. 7302.22 lakhs x 0.497 = Rs.3629.20 lakhs

Value of Yes Ltd.

	Before merger (Rs.lakhs)	After merger (Rs.lakhs)
PV of CF (1-5 years)	882.44	1679.27
Add: PV of TV5	1826.475	3629.2
	2708.915	5308.47

(ii) Value of Acquisition

= Value of Merged Entity - Value of Yes Ltd.

= Rs.5308.47 lakhs - Rs.2708.915 lakhs = Rs.2599.555 lakhs

(iii) Gain to Shareholders of Yes Ltd.

Share of Yes Ltd. in merged entity = Rs.5308.47 lakhs x 1/1.5
= Rs.3538.98 lakhs

Gain to shareholder = Share of Yes Ltd. in merged entity – Value of Yes Ltd. before Merger

= Rs.3538.98 lakhs - Rs.2708.915 = Rs.830.065 lakhs

2013

Question 24

May 2013 RTP – Similar to May 2011 Paper – Question 18

Question 25

May 2013 Paper – 5 Marks

ABC Company is considering acquisition of XYZ Ltd. This has 1.5 Cores shares outstanding and issued. The Market price per share is Rs.400 at present. ABC's average cost of capital is 12%. Available information from XYZ indicates its expected cash accruals for the next 3 years as follows:

Year	Rs.Cr
1	250
2	300
3	400

Calculate the range of valuation that ABC has to consider. (PV factors at 12% for years 1 to 3 respectively: 0.893, 0.797 and 0.712).

Solution :

Option 1 : Valuation Based on Market Price (Minimum Value)

Market Value = 400

Business Value = 400 x 1.5 = 600 Crs

Option 2 : Valuation Based on DCF (Maximum Value)

Business Value = $250/1.12 + 300/(1.12)^2 + 400/(1.12)^3$
= 747.15

Price Per Share = 747.15 / 1.5 = 498.10

So the minimum value that ABC can offer will be 400 per share and maximum value that ABC can

offer will be 498.10 per share

Question 26**May 2013 Paper – 8 Marks**

Longitude Limited is in the process of acquiring Latitude Limited on a share exchange basis. Following relevant data are available:

		Longitude	Latitude
Profit After Tax (PAT)	Rs.in lakhs	140	60
Number of shares	Lakhs	15	16
Earnings per Share(EPS)	Rs.	8	5
Price Earnings Ratio (P/E Ratio)		15	10

You are required to determine:

- (i) Pre-merger Market Value per Share, and
- (ii) The maximum exchange ratio Longitude Limited can offer without the dilution of
 - (1) EPS and
 - (2) Market Value per Share

Calculate Ratio/s up to four decimal points and amounts and number of shares up to two decimal points.

Solution :

- (A) Pre Merger Market Value per share (PE x EPS) Longitude

$$= 8 \times 15 = \text{Rs.}120 \text{ per share}$$

$$\text{Latitude} = 5 \times 10 = \text{Rs.}50 \text{ per share}$$

- (B) (i) Maximum Exchange Ratio without dilution of EPS

The exchange ratio should be based on MPS for not to dilute MPS

Swap ratio (Based on EPS Price)

$$= \text{Target Company/Acquiring Company}$$

$$= 5/8$$

$$= 0.625$$

Check

Earnings per share of Merged Firm

$$\text{EPS} = 200/25 = 8$$

Total Earnings

Longitude Ltd. 140

Latitude Ltd. 60 200

$$\text{Equivalent EPS for Latitude} \\ = 8 \times 0.625 = 5 \text{ Proved}$$

Total No

Longitude Ltd 15

Latitude Ltd 10 25

(16 x 0.625)

- (ii) Maximum Exchange Ratio without dilution of MPS

The exchange ratio should be based on EPS for not to dilute EPS

$$\text{Swap Ratio (Based on EPS Price)} = \frac{\text{Target Company}}{\text{Acquiring Company}} = \frac{50}{120}$$

Therefore maximum no of shares to be issue to Latitude = $16 \times 0.4167 = 6.67$ Lakhs

Question 27**Nov 2013 RTP**

Hanky Ltd. and Shanky Ltd. operate in the same field, manufacturing newly born babies's clothes. Although Shanky Ltd. also has interests in communication equipments, Hanky Ltd. is planning to take over Shanky Ltd. and the shareholders of Shanky Ltd. do not regard it as a hostile bid.

The following information is available about the two companies.

	Hanky Ltd.	Shanky Ltd.
Current earnings	Rs.6,50,00,000	Rs.2,40,00,000
Number of shares	50,00,000	15,00,000
Percentage of retained earnings	20%	80%
Return on new investment	15%	15%
Return required by equity shareholders	21%	24%

Dividends have just been paid and the retained earnings have already been reinvested in new projects. Hanky Ltd. plans to adopt a policy of retaining 35% of earnings after the takeover and expects to achieve a 17% return on new investment.

Saving due to economies of scale are expected to be Rs.85,00,000 per annum. Required return to equity shareholders will fall to 20% due to portfolio effects. Requirements

- Calculate the existing share prices of Hanky Ltd. and Shanky Ltd.
- Find the value of Hanky Ltd. after the takeover
- Advise Hanky Ltd. on the maximum amount it should pay for Shanky Ltd.

Solution :

- Existing share price of Hanky (P) Ltd.

$$g = r \times b \quad r = 15\% \quad b = 20\%$$

$$g = 0.15 \times 0.2 = 0.03$$

$$\text{Ex dividend market value} = \text{Next year's dividend}/Ke-g$$

$$= 6,50,00,000 \times 0.8 \times 1.03/0.21-0.03 = \text{Rs.}29,75,55,556$$

$$= \text{Rs.}59.51 \text{ per share}$$

$$\text{Existing share price Shanky (P) Ltd.} \quad g = r \times b$$

$$= 0.15 \times 0.8$$

$$= 0.12$$

$$\text{Ex dividend market value} = \text{Next year's dividend}/Ke-g$$

$$= 2,40,00,000 \times 0.2 \times 1.12/0.24-0.12 = \text{Rs.}4,48,00,000$$

$$= \text{Rs.}29.87 \text{ per share}$$

- Value of Hanky Ltd. after the takeover

Care must be taken in calculating next year's dividend and the subsequent growth rate. Next year's earnings are already determined, because both companies have already reinvested their retained earnings at the current rate of return. In addition, they will get cost savings of

Rs.85,00,000.

The dividend actually paid out at the end of next year will be determined by the new 35% retention and the future growth rate will take into account the increased return on new investment.

Growth rate for combined firm, $g = 0.17 \times 0.35 = 0.0595$

New cost of equity = 20%
 $= 6,50,00,000 \times 1.03 + 2,40,00,000 \times 1.12$

Next year's earnings + Rs.85,00,000
 $= \text{Rs. } 10,23,30,000$

Next year's dividend = Rs. 10,23,30,000 x 0.65
 $= \text{Rs. } 6,65,14,500$

Market Value = $6,65,14,500 / 0.20 - 0.0595$
 $= \text{Rs. } 47,34,12,811$

Maximum Hanky Ltd. should pay for Shanky Ltd.

Combined value = Rs.47,34,12,811
 Present Value of Hanky Ltd. = Rs. 29,75,55,556
 $= \text{Rs. } \underline{17,58,57,255}$

Question 28

Nov 2013 Paper – 8 Marks

Trupti Co. Ltd. promoted by a Multinational group "INTERNATIONAL INC" is listed on stock exchange holding 84% i.e. 63 lakhs shares.

Profit after Tax is Rs.4.80 crores.

Free Float Market Capitalisation is Rs.19.20 crores.

As per the SEBI guidelines promoters have to restrict their holding to 75% to avoid delisting from the stock exchange. Board of Directors has decided not to delist the share but to comply with the SEBI guidelines by issuing Bonus shares to minority shareholders while maintaining the same P/E ratio.

Calculate

- (i) P/E Ratio
- (ii) Bonus Ratio
- (iii) Market price of share before and after the issue of bonus shares
- (iv) Free Float Market capitalization of the company after the bonus shares.

Solution :

- (1) P.E Ratio

	% Holding	No of shares
Promoters Holding	84%	63 Lakhs
Minority Holding	16%	12 Lakhs
Total Shares	100%	75 Lakhs

Free Float Market Capitalisation = Rs.19.20 Lakhs
 Hence Market Price per shares = $\frac{19.20}{12}$ = Rs.160 per share
 EPS (PAT / No = $\frac{480}{75}$ = Rs. 6.4 per share
 P.E. Ratio (MPS / EPS = 25 times

- (2) No of bonus shares to be issued
 Promoters holding 84 = 63 Lakhs
 Promoters holding to be reduced to 75% without delisting shares, so the total no of shares should be
 = $63/75\%$
 = 84 Lakhs
 Minority Interest in the total = $84 \times 25\% = 21$ Lakhs
 So No of bonus shares to be issue to Minority Shareholders = $21 - 12 = 9$ lakh shares
 (3 for every 4 held)
 Market Price of share before and After Bonus Before Bonus = Rs. 160 per share
 After Bonus
 New EPS = $480/84 =$ Rs. 5.71 per
 Share New MPS = $5.71 \times 4 =$ Rs. 22.84 share
 Free Float Market Capitalization = 22.84×21 Lakhs = Rs. 479.64 Crores

Question 29**Nov 2013 Paper – 10 Marks**

M/s Tiger Ltd. wants to acquire M/s. Leopard Ltd. The balance sheet of Leopard Ltd. as on 31st March, 2012 is as follows:

Liabilities	Amount	Assets	Amount
Equity Capital Retained Earnings	7,00,000	Cash Debtors	50,000
12% Debentures	3,00,000	Inventories	70,000
Creditors and	3,00,000	Fixed Assets	2,00,000
other liabilities	3,20,000		13,00,000
	16,20,000		16,20,000

- (1) Shareholders of Leopard Ltd. will get one share in Tiger Ltd. for every two shares. External liabilities are expected to be settled at Rs. 5,00,000. Shares of Tiger Ltd. would be issued at its current price of Rs. 15 per share. Debenture-holders will get 13% convertible debentures in the purchasing company for the same amount. Debtors and inventories are expected to realize Rs.2,00,000.
- (2) Tiger Ltd. has decided to operate the business of Leopard Ltd. as a separate division. The division is likely to give cash flows (after tax) to the extent of Rs.5,00,000 per year for 6 years. Tiger Ltd. has planned that, after 6 years, this division would be demerged and disposed of for Rs.2,00,000.
- (3) The company's cost of capital is 16%.

Make a report to the Board of the company advising them about the financial feasibility of this

acquisition.

Net present values for 16% for Rs. 1 are as follows:

Years	1	2	3	4	5	6
PV	862	743	641	552	476	410

Solution :

Calculation of Purchase Consideration

	Rs.
Issue of shares (35,000 x 15)	5,25,000
External Liabilities Settled	5,00,000
13% Debentures	<u>3,00,000</u>
	13,25,000
Less : Debtors and Inventories	2,00,000
Cash	<u>50,000</u>
Net	10,75,000

$$\begin{aligned}
 \text{Net Present Value} &= \text{PV of Cash Inflows} + \text{PV of Demerger of Leopard Ltd.} - \text{Cash Outflow} \\
 &= 5,00,000 \times \text{PVIFA (16\%, 6)} + 2,00,000 \times \text{PVIF (16\%, 6)} - 10,75,000 \\
 &= 5,00,000 \times 3,684 + 2,00,000 \times 0.410 - 10,75,000 \\
 &= 8,49,000
 \end{aligned}$$

Since NPV of the decision is positive it is advantageous to acquire Leopard Ltd.

2014

Question 30

May 2014 RTP

Following information is provided relating to the acquiring company Mani Ltd. and the target company Ratnam Ltd:

	Mani Ltd	Ratnam Ltd.
Earning after tax (Rs. lakhs)	2,000	4,000
No of shares outstanding	200	1,000
P/E ratio (No. times)	10	5

Required ;

- 1) What is the Swap Ratio based on current market Price ?
- 2) What is the EPS of Mani Ltd. after acquisition?
- 3) What is the expected market price per share of Mani Ltd after acquisition, assuming its P/E ratio of adversely affected by 10 ?
- 4) Determine the market value of the merged Co.
- 5) Calculate gain/loss for shareholder of the two independent entities, due to the merger.

Solution :

		Mani	Ratnam
A	Earnings After Tax	2,000 lakhs	4000 lakhs
B	No of Shares	200 lakhs	1000 lakhs

C	Earnings per share (A/B)	10	4
D	P.E. Ratio	10	5
E	Market Price per share(C × D)	100	20

- 1) Swap Ratio on Current Market Price
 Swap Ratio(Based on Market Price)
 = Target company/Acquiring company
 = 20/100
 = 0.2

- 2) EPS of Mark after acquisition

Total Earnings

Mani Ltd.	2,000	
Ratnam Ltd.	<u>4,000</u>	6,000

$$\text{EPS} = 6,000/400 = 15$$

Total No

Mani Ltd	200	
Ratnam Ltd	<u>200</u>	400
	(1000 × 0.2)	

- 3) MPS of Mark after acquisition = $15 \times 9 (10 - 10\%) = 135$
 4) Market Value of Merged Firm = 135×400 Rs. 54,000
 5) Gain/Loss to Shareholders of both companies

	Firm Mark	Firm Mask	Total
M.V Post Merger	27,000	27,000	54,000
	(200 × 135)	(200 × 135)	
M.V Pre Merger	20,000	20,000	40,000
	(200 × 100)	(1000 × 20)	
GAIN	7,000	7,000	14,000
% Gain	35%	35%	

Question 31

May 2014 Paper – 8 Marks

The equity shares of XYZ Ltd. are currently being traded at Rs.24 per share in the market. XYZ Ltd. has total 10,00,000 equity shares outstanding in number; and promoters' equity holding in the company is 40%. PQR Ltd. wishes to acquire XYZ Ltd. because of likely synergies. The estimated present value of these synergies is Rs.80,00,000. Further PQR feels that management of XYZ Ltd. has been over paid. With better motivation, lower salaries and fewer perks for the top management, will lead to savings of Rs.4,00,000 p.a.

Top management with their families are promoters of XYZ Ltd. Present value of these savings would add Rs.30,00,000 in value to the acquisition.

Following additional information is available regarding PQR Ltd.:

Earnings per share : Rs.4
 Total number of equity shares outstanding : 15,00,000

Market price of equity share : Rs.40 Required:

- (i) What is the maximum price per equity share which PQR Ltd. can offer to pay for XYZ Ltd.?
- (ii) What is the minimum price per equity share at which the management of XYZ Ltd. will be willing to offer their controlling interest?

Solution :

- (a) Calculation of maximum price per share at which PQR Ltd. can offer to pay for XYZ Ltd.'s share

Market Value (10,00,000 x Rs.24)	Rs.2,40,00,000
Synergy Gain	Rs.80,00,000
Saving of Overpayment	Rs.30,00,000
	Rs.3,50,00,000

Maximum Price (Rs.3,50,00,000/10,00,000) Rs.35

- (b) Calculation of minimum price per share at which the management of XYZ Ltd.'s will be willing to offer their controlling interest

Value of XYZ Ltd.'s Management Holding

(40% of 10,00,000 × Rs.24) Rs.96,00,000

Add: PV of loss of remuneration to top management Rs.30,00,000

Rs.1,26,00,000

No. of Shares

4,00,000

Minimum Price (Rs.1,26,00,000/4,00,000)

Rs.31.50

Question 32

Nov 2014 RTP – Similar to Question 23 : Nov 2012 Paper

Question 33

Nov 2014 Paper – 5 Marks

Elrond Limited plans to acquire Doom Limited. The relevant financial details of the two firms prior to the merger announcement are:

	Elrond Limited	Doom Limited
Market price per share	Rs.50	Rs.25
Number of outstanding shares	20 lakhs	10 Lakhs

The merger is expected to generate gains, which have a present value of Rs. 200 lakhs. The exchange ratio agreed to is 0.5.

What is the true cost of the merger from the point of view of Elrond Limited?

Solution :

Shareholders of Doom Limited will get 5 lakh share of Elrond Limited, so they will get 5 lakhs/20 lakhs + 5 lakhs = 20% of shares of Elrond Limited.

The Value of Elrond after Merger will be :

= Rs. 50 x 20 Lakh + Rs. 25 x 10 Lakh + Rs. 200 Lakh

= Rs. 1000 Lakh + 250 Lakh + Rs. 200 Lakh = Rs. 1,450 Lakhs Cost of Merger will be

= (20% of 1,450) – Rs. 250 Lakhs

= Rs. 290 Lakhs – Rs. 250 Lakhs

= Rs. 40 Lakhs

Question 34**Nov 2014 Paper – 10 Marks**

Cauliflower Limited is contemplating acquisition of Cabbage Limited. Cauliflower Limited has 5 lakh shares having market value of Rs. 40 per share while Cabbage Limited has 3 lakh shares having market value of Rs. 25 per share. The EPS for Cabbage Limited and Cauliflower Limited are Rs. 3 per share and Rs. 5 per share respectively. The managements of both the companies are discussing two alternatives for exchange of shares as follows:

- (i) In proportion to relative earnings per share of the two companies.
- (ii) 1 share of Cauliflower Limited for two shares of Cabbage Limited.

Required:

- (i) Calculate the EPS after merger under both the alternatives.
- (ii) Show the impact on EPS for the shareholders of the two companies under both the alternatives.

Solution :

- (1) EPS of merged firm under 2 options

Option 1 : Swap Ratio based on EPS of companies

Swap Ratio (Based on Market price)

= Target company/Acquiring company

= $3/5$

= 0.6

EPS of the Merged Firm

Total Earnings

Cauliflower (5 x 5) 25,00,000

Cabbage (3 x 3) 9,00,000 34,00,000

$$\text{EPS} = 34,00,000 / 6,80,000 = 5$$

Total No

Cauliflower 5,00,000

Cabbage 1,80,000 6,80,000

(3,00,000 × 0.6)

There will no change in EPS of the two companies as the swap ratio is based on EPS of two companies

Option 2 : Swap Ratio of 0.5 (1/2)

EPS of the Merged Firm

Total Earnings

Cauliflower Ltd 25,00,000

Cabbage Ltd. 9,00,000 34,00,000

$$\text{EPS} = 34,00,000 / 6,50,000 = 5.23$$

Total No

Cauliflower Ltd 5,00,000

Cabbage Ltd 1,50,000 6,50,000
 (3,00,000 x 0.5)

(2) Impact on EPS of 2 companies

Option 1 : Swap Based on EPS : There will be no impact on the EPS of the companies as the swap is based on EPS

Option 2 : Swap = 0.5

	Cauliflower Ltd.	Cabbage Ltd.
Pre Merger EPS	5	3
Post Merger EPS	5.23	2.615 (5.23 × 0.5)
Gain / Loss	0.23	(0.385)
% Gain / (Loss)	4.6%	(12.83%)

2015

Question 35

May 2015 RTP

M plc and C plc operating in same industry are not experiencing any rapid growth but providing a steady stream of earnings. M plc's management is interested in acquisition of C plc due to its excess plant capacity. Share of C plc is trading in market at £4 each. Other data relating to C plc is as follows:

Particulars	M plc	C plc	Combined Entity
Profit after tax	£4,800,000	£3,000,000	£9,200,000
Residual Net Cash Flow per year	£6,000,000	£4,000,000	£12,000,000
Required return on Equity	12.50%	11.25%	12.00%

Balance Sheet of C plc

	Amount (£)		Amount (£)
Assets		Liabilities	
Current Assets	2,73,00,000	Current Liabilities	1,34,50,000
Other Assets	55,00,000	Long Term Liabilities	1,11,00,000
Property Plants & Equipments	2,15,00,000	Reserve & Surplus	2,47,50,000
		Share Capital (5 million common shares @ £1 each)	50,00,000
	5,43,00,000		5,43,00,000

You are required to compute:

- (i) Minimum price per share C plc should accept from M plc.
- (ii) Maximum price per share M plc shall be willing to offer to C plc.
- (iii) Floor Value of per share of C plc. Whether it shall play any role in decision for its acquisition by M plc.

Solution :

$$\begin{aligned}
 \text{Value of C plc} &= \text{Residual Cash Flow/Ke-g} \\
 &= 40,00,000/0.1225-0 \\
 &= \text{£}3,55,55,556
 \end{aligned}$$

$$\begin{aligned} \text{Value of per share of C plc} &= 3,55,55,556/50,00,000 \\ &= \text{£}7.11 \end{aligned}$$

$$\begin{aligned} \text{Book value of per share of C plc} &= 2,97,50,000/50,00,000 \\ &= \text{£}5.95 \end{aligned}$$

$$\begin{aligned} \text{Value of M plc} &= \text{Residual Cash Flow/Ke-g} \\ &= 60,00,000/0.1225-0 \\ &= \text{£}4,80,00,000 \end{aligned}$$

$$\begin{aligned} \text{Value of combined Entity} &= 1,20,00,000/0.12-0 \\ &= \text{£}10,00,00,000 \end{aligned}$$

Value of Synergy = Value of Combined Entity – Individual Value of M plc and C plc

$$\text{Value of Synergy} = \text{£}100,000,000 - (\text{£}48,000,000 + \text{£}35,555,556) = \text{£}16,444,444$$

- (i) Minimum price per share C plc should accept from M plc is £5.95 (current book value).
- (ii) Maximum price per share M plc shall be willing to offer to C plc shall be computed as follows:
 = Value of C plc as per Residual Cash Flow Synergy Benefits/No. of shares
 = $3,55,55,556 + 1,64,44,444/50,00,000$
 = $5,20,00,000/50,00,000$
 = £10.40
- (iii) Floor Value of per share of C plc shall be £4 (current market price) and it shall not play any role in decision for the acquisition of C plc as it is lower than its current book value.

Question 36**May 2015 RTP – Similar to Question 28 : Nov 2013 RTP****Question 37****May 2015 RTP**

A Ltd. (Acquirer company's) equity capital is Rs. 2,00,00,000. Both A Ltd. and T Ltd. (Target Company) have arrived at an understanding to maintain debt equity ratio at 0.30 : 1 of the merged company. Pre-merger debt outstanding of A Ltd. stood at Rs.20,00,000 and T Ltd at Rs.10,00,000 and marketable securities of both companies stood at Rs.40,00,000.

You are required to determine whether liquidity of merged company shall remain comfortable if A Ltd. acquires T Ltd. against cash payment at mutually agreed price of Rs. 65,00,000

Solution :

Debt capacity of merged company (2,00,00,000 × 0.30)	60,00,000
Less: Debt of A Ltd and T Ltd.	<u>30,00,000</u>
	30,00,000
Add: Marketable securities of both companies	<u>40,00,000</u>
	<u>70,00,000</u>

Since the combined liquidity of merged company shall remain comfortable, it shall be feasible to pay cash for acquiring the T Ltd. against tentative price of Rs.65,00,000.

Question 38**May 2015 Paper – 8 Marks**

BA Ltd and DA Ltd both the companies operate in the same industry. The financial statements of both the companies for the Current financial year are as follows :

Balance sheet

Particulars	BA Ltd (Rs.)	DA Ltd (Rs.)
Current Assets	14,00,000	10,00,000
Fixed Assets (Net)	10,00,000	5,00,000
Total	24,00,000	15,00,000
Equity Capital (Rs.10 each)	10,00,000	8,00,000
Retained earnings	2,00,000	
14% long term debts	5,00,000	3,00,000
Current liabilities	7,00,000	4,00,000
Total	24,00,000	15,00,000

Income statement

	BA Ltd (Rs.)	DA Ltd (Rs.)
Net sales	34,50,000	17,00,000
Cost of goods sold	27,60,000	13,60,000
Gross profit	6,90,000	3,40,000
Operating expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earnings before taxes	4,20,000	1,98,000
Taxes @ 50%	2,10,000	99,000
Earnings after taxes (EAT)	2,10,000	99,000
Additional Information : No. of Equity shares	1,00,000	80,000
Dividend payment ratios (D/P)	40%	60%
Market price per share	Rs.40	Rs.15

Assume that both companies are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms and are required to :

- (1) Decompose the share price of both the companies into EPS & P/E components : and also segregate their EPS figures into Return on Equity (ROE) and book value/intrinsic value per share components.
- (2) Estimate future EPS growth rate for each company.
- (3) Based on expected operating synergies BA Ltd estimates that the intrinsic value of DA's equity share would be Rs.20 per share on its acquisition. you are required to develop a range of justifiable equity share exchange ratios that can be offered by BA Ltd to the shareholders of DA Ltd . Based on your analysis in part (1) and (2) would you expect the negotiated terms to be closer to the upper or the lower exchange ratio limits and why ?
- (4) Calculate the post merger EPS based on an exchange ratio 0.4 : 1 being offered by BA Ltd and indicate the immediate EPS accretion or dilution if any that will occur for each group of

shareholders.

- (5) Based on 0.4:1 exchange ratio and assuming that BA's Ltd pre merger P/E Ratio will continue after the merger estimate the post merger market price. Also show the resulting accretion or dilution in pre merger market prices.

Solution :

		BA Ltd	DA Ltd
A	Earnings After Tax	2,10,000	99,000
B	No of Equity Shares	1,00,000	80,000
C	EPS (A/B)	2.10	1.2375
D	Market Price	40	15
E	PE Ratio(D/ E)	19.05	12.12
F	Net worth (Capital + Reserves)	12,00,000	8,00,000
G	B.V (Net worth / No.	12	10
H	ROE = EAT/Net worth x 100	17.50%	12.375

- 1) EPS / PE / BV and ROE are calculated above

- 2) Growth Rate

$$G = br \text{ (Retention Ratio } \times \text{ ROE)}$$

$$\text{Retention Ratio} = 100 - \text{Payout Ratio BA Ltd.} = 100 - 40 = 60\%$$

$$\text{DA Ltd.} = 100 - 60\% = 40\%$$

Growth

$$\text{BA Ltd} = 17.5 \times 60\% = 10.5\%$$

$$\text{DA Ltd} = 12.375 \times 40\% = 4.97\%$$

- 3) Range of Prices

Upper Limit = Based on estimated share price for DA at 20

$$\text{Swap} = \frac{\text{Target company}}{\text{Acquiring company}}$$

$$= \frac{20}{40}$$

$$= 0.5$$

Lower Limit = Based on the market price of Rs.15

$$\text{Swap} = \frac{\text{Target company}}{\text{Acquiring company}}$$

$$= \frac{15}{40}$$

$$= 0.375$$

Based on the analysis of EPS, PE, ROE and BV and even the Growth, the exchange ratio should be closer to lower limit.

- 4) EPS Based on the swap ratio of 0.4

$$\text{BA Ltd.} \quad 2,10,000$$

$$\text{DA Ltd.} \quad 99,000 \quad 3,09,000$$

$$\text{EPS} = \frac{3,09,000}{1,32,000} = 2.341$$

Total No.

BA Ltd.	1,00,000	
DA Ltd.	32,000	1,32,000
	(80,000 × 0.4)	

Changes in EPS

	BA	DA
Post Merger	2.341	0.9364 (2.341 × 0.4)
Pre	<u>2.1</u>	<u>1.2375</u>
Gain / (Loss)	0.241	0.3011
% Gain / (Loss)	10.29%	32.155%

5) Market Price assuming the PE ratio remains constant

$$\text{BA Ltd} = 2.341 \times 19.05 = 44.59$$

$$\text{DA Ltd} = 44.59 \times 0.4 = 17.84$$

	BA	DA
Post	44.59	17.84
Pre Merger	<u>40</u>	<u>15</u>
Gain / (Loss)	4.59	2.84
% Gain / (Loss)	10.29%	18.92

Question 39**Nov 2015 RTP**

XY Ltd. has two major operating divisions, furniture manufacturing and real estate, with revenues of Rs. 2600 crore and Rs. 6200 crore respectively. Following financial information is available.

Balance Sheet as on 31-3-2015

Liabilities	Amount (Rs. Crore)	Assets	Amount (Rs. Crore)
Ordinary Shares (Rs.10 Per Share)	500	Land and Buildings	800
Reserves	1300	Plant and Machinery	1400
Secured Term Loans	600	Current Assets	2500
13% Debenture(Rs.100 par)	500		
Current Liabilities	1800		
	4700		4700

Summarised cash flow data for XY Ltd. is as follows:

	Amount (Rs. Crore)
Sales	8800
Operating expenses	8030
Head office expenses	80
Interest	110
Taxation	140
Dividend	150

The company's current share price is Rs. 118.40, and each debenture is trading in market at Rs.131. Projected financial data (in Rs.Crore) in real terms (excluding depreciation) of the two divisions is as follows:

Year	1	2	3	4	5	6
Furniture Manufacturing						
Operating Profit before Tax	450	480	500	520	570	600
Allocated HO Overheads*	40	40	40	40	40	40
Depreciation	100	80	70	80	80	80
Real Estate						
Operating Profit before Tax	320	400	420	440	460	500
Allocated HO Overheads*	40	30	30	30	30	30
Depreciation	50	50	50	50	50	50

Allocated HO Overheads reflect actual cash flows. Other Information:

- Applicable Corporate tax rate is of 30%, payable in the year, the relevant cash flow arises.
- Inflation is expected to remain at approximately 3% per year.
- The risk free rate is 5.5% and the market return 14%.
- XY Ltd.'s equity beta is 1.15.
- The average equity betas in the Furniture Manufacturing and Realty Sectors are 1.3 and 0.9 respectively and the gearing levels in Furniture Manufacturing and Realty sectors by market values are 70% equity 30% debt and 80% equity 20% debt respectively.
- The current cost of the debentures and long term loan are almost identical.
- The debentures are redeemable at par in 15 years' time.

The company is considering a demerger whereby the two divisions shall be floated separately on the stock market.

Terms of Demerger

- (1) The debentures would be serviced by the real estate division and the long term loans by the furniture manufacturing division.
- (2) The existing equity would be split evenly between the divisions, although new ordinary shares would be issued to replace existing shares.
- (3) If a demerger occurs allocated overhead would rise to Rs.60 crore per year for each company.
- (4) Demerger would involve single one time after tax cost of Rs. 160 crore in the first year which would be shared equally by the two companies. There would be no other significant impact on expected cash flows.

Required :

Using real cash flows and time horizon of 15 year time and infinite period, evaluates whether or not it is expected to be financially advantageous to the original shareholders of XY Ltd. for the company to separately float the two divisions on the stock market.

Note: In any gearing estimates the Furniture Manufacturing division may be assumed to comprise 55% of the market value of equity of XY Ltd, and Real Estate division 45%.

Year	1	2	3	4	5	6-15
PVAF@10%	0.909	0.82	0.751	0.683	0.621	3.815
PVAF@8.5%	0.922	0.849	0.783	0.722	0.665	4.364

Solution :

To decide whether the XY Ltd. should go for the option of demerger i.e. floating two companies for Furniture Manufacturing business and Real Estate we should compare their values.

Working Notes:

(1) Calculation of Discounting Rates

(a) For Furniture Manufacturing

Market Value of Debt (Secured Loan)	Rs.600.00 crore
Market Value of Equity (Rs.118.40 x 50 crore x 55%)	<u>Rs.3256.00 crore</u>
Total	<u>Rs.3856.00 crore</u>

Debt = 15.56% and Equity = 84.44%

Since this level of gearing differs from the gearing level of industry to find out the beta we must re-gear the asset beta taking into account the current structure. Assuming Debt to be risk free let us de-gear the beta as follows

De-leveraging

$$B_u = \frac{\beta_l}{1 + \frac{D}{E}(1-t)} = \frac{1.3}{1 + \frac{30}{70}(1-0.3)} = 1$$

Re-leveraging

$$B_l = B_u \times \left(1 + \frac{D}{E}(1-t)\right) = 1 \times \left(1 + \frac{15.56}{84.44}(1-0.3)\right) = 1.129$$

Cost of Equity using CAPM

$$= R_f + \beta (R_M - R_f) \\ = 5.5 + 1.129(14 - 5.5) = 15.10\%$$

$$\text{Cost of Debt} = \frac{13(1-0.3) + \frac{100-131}{15}}{\frac{(100+131)}{2}} = 6.09\%$$

$$\text{Cost of Capital} = 15.10\% \times 84.44\% + 6.09\% \times 15.56\% \\ = 13.70\%$$

$$\text{Real WACC} = \frac{1 + \text{Nominal Rate}}{1 + \text{Inflation Rate}} - 1 = \frac{1 + 0.1370}{1 + 0.03} - 1 = 10.39\% \text{ say } 10\%$$

(b) For Real Estate

Market Value of Debt (Secured Loan)	Rs.655.00 crore
Market Value of Equity (Rs.118.40 x 50 crore x 45%)	<u>2664.00 crore</u>
Total	<u>3319.00 crore</u>
Debt = 19.73% and Equity = 80.27%	

Since this level of gearing is almost equal to the gearing level of industry the beta of industry shall be the beta of Real Estate Division and Cost of Equity using CAPM will be:

Cost of Equity using CAPM

$$= R_f + \beta(RM - R_f)$$

$$= 5.5 + 0.9(14 - 5.5) = 13.15\%$$

$$\text{Cost of Capital} = 13.15\% \times 80.27\% + 6.09\% \times 19.73\% = 11.76\%$$

$$\text{Real WACC} = \frac{1 + \text{Nominal Rate}}{1 + \text{Inflation Rate}} - 1 = \frac{1 + 0.1176}{1 + 0.03} - 1 = 8.5\%$$

(2) Calculation of Value of Both Division

(a) Furniture Division

Year	1	2	3	4	5	6 Onwards
Operating Profit	450	480	500	520	570	600
before Tax						
Allocated HO	60	60	60	60	60	60
Overheads						
Depreciation	100	80	70	80	80	80
	290	340	370	380	430	460
Less: Tax@30%	87	102	111	114	129	138
	203	238	259	266	301	322
Add: Depreciation	100	80	70	80	80	80
	303	318	329	346	381	402
Less: One Time Cost	80	-	-	-	-	-
	223	318	329	346	381	402
PVF@10%	0.909	0.826	0.751	0.683	0.621	
PV	202.71	262.67	247.08	236.32	236.6	

$$\text{Terminal Value} = 402 / 0.10 \times 0.621 = 2,496.42$$

$$\text{Total Value of Furniture Division for Infinite Period} = \text{Rs. } 3,681.80$$

$$\text{Total Value of Furniture Division for 15 years} = \text{Rs. } 1185.38 \text{ crore} + \text{Rs. } 402 \text{ crore} \times 3.815 = \text{Rs. } 2719.01 \text{ crore}$$

(b) Real Estate Division

Year	1	2	3	4	5	6 Onward
Operating profit before Tax	320	400	420	440	460	500
Allocated HO	60	60	60	60	60	60
Overheads						
Depreciation	50	50	50	50	50	50
	210	290	310	330	350	390
Less: Tax@30%	63	87	93	99	105	117

	147	203	217	231	245	273
Add:	50	50	50	50	50	50
Depreciation						
	197	253	267	281	295	323
Less: One Time	80	-	-	-	-	-
Cost						
	117	253	267	281	295	323
PVF@8.5%	0.922	0.849	0.783	0.722	0.665	
PV	107.87	214.80	209.06	202.88	196.18	

Terminal Value = $323/0.085 \times 0.665 = 2,527$

Total Value of Furniture Division for Infinite Period = Rs.3,457.79

Total Value of Furniture Division for 15 years = Rs.930.79 crore + Rs.323 crore \times 4.364
= Rs.2340.36 crore

Summary

Total of two divisions (Infinite Period)= Rs.3681.80 crore + Rs.3457.79 crore – Rs.1255.00 crore
=Rs.5884.59crore

Total of two divisions (15 years horizon) = Rs.2719.01 crore + Rs.2340.36 crore – Rs.1255.00 crore
=Rs.3804.37crore

Current Market Value of Equity= Rs.118.40 \times 50 crore = Rs. 5920.00crore

Decision: Since the total of the two separate divisions with both time horizons (Infinite and 15 years) is less than the Current Value of Equity demerger is not advisable.

Question 40

Nov 2015 – RTP

Two companies Bull Ltd. and Bear Ltd. recently have been merged. The merger initiative has been taken by Bull Ltd. to achieve a lower risk profile for the combined firm in spite of fact that both companies belong to different industries and disclose a little co- movement in their profit earning streams.

Though there is likely to synergy benefits to the tune of Rs.7 crore from proposed merger. Further both companies are equity financed and other details are as follows:

	Market	Beta
Bull Ltd.	Rs.1000 crore	1.50
Bear Ltd.	Rs.500 crore	0.60

Expected Market Return and Risk Free Rate of Return are 13% and 8% respectively. Shares of merged entity have been distributed in the ratio of 2:1 i.e. market capitalization just before merger. You are required to:

Calculate return on shares of both companies before merger and after merger.

Calculate the impact of merger on Mr. X, a shareholder holding 4% shares in Bull Ltd. and 2% share of Bear Ltd.

Solution :

(a) Expected Return using CAPM

(i) Before Merger

Share of Bull Ltd.	$8\% + 1.50 (13\% - 8\%) =$	15.50%
Share of Bear Ltd.	$8\% + 0.60(13\% - 8\%) =$	11.00%

(ii) After Merger

Beta of merged company shall be weighed average of beta of both companies as follows:

$$2/3 \times 1.50 + 1/3 \times 0.60 = 1.20$$

Thus, expected return shall be: $8\% + 1.20 (13\% - 8\%) = 14\%$

(b) Impact of Merger on Mr X.

After merger his % holding in merged company shall be:

$$2/3 \times 4\% + 1/3 \times 2\%$$

$$= 3.33\%$$

The value of Mr X. Holding before merger was :

Bull Ltd.	$4\% \times \text{Rs.}1000 \text{ crore}$	Rs.40 crore
Bear Ltd.	$2\% \times \text{Rs.}500 \text{ crore}$	Rs.10 crore
		Rs.50 crore

To compute the value of holding of Mr. X, after merger first we have to compute the value of merged entity as follows:

Bull Ltd. Bear Ltd.	$15.50\% \times \text{Rs.} 1000 \text{ crore}$	Rs. 155 crore
Synergy Benefits	$11\% \times \text{Rs.} 500 \text{ crore}$	Rs. 55 crore
		Rs. 217 crore

Market Capitalization of Merged Entity = $217/0.14 = 1550 \text{ crore}$ Value of Mr X holding = $1550 \times 3.33\% = 51.67 \text{ Crore}$

Question 41**Nov 2015 - Paper**

The following information is provided relating to the acquiring company Efficient Ltd. and the target Company Healthy Ltd.

	Efficient Ltd.	Healthy Ltd.
No. of shares (F.V. Rs.10 each)	10.00 lakhs	7.5 lakhs
Market capitalization	500.00 lakhs	750.00 lakhs
P/E ratio (times)	10.00	5.00
Reserves and surplus)	300.00 lakhs	165.00 lakhs
Promoter's Holding (No. of share)	4.75 lakhs	5.00 lakhs

Board of Directors of both the companies have decided to give a fair deal to the shareholders and accordingly for swap ratio the weights are decided as 40%, 25% and 35% respectively for Earning , Book value and market Price of share of each Company:

- Calculate the swap ratio and also calculate Promoter's holding % after acquisition.
- What is the EPS of Efficient Ltd. after acquisition of Healthy Ltd.?
- What is the expected market price per share and market capitalization of Efficient Ltd. After

acquisition, assuming P/E of firm Efficient Ltd. remains unchanged.

- (4) Calculate free float market capitalization of the merged firm.

Solution :

		Efficient Ltd	Healthy Ltd
A	No of Shares (F.V – Rs. 10 each)	10 Lakhs	7.5 Lakhs
B	Capital	100 lakhs	75 lakhs
C	Reserves and Surplus	300 lakhs	165 lakhs
D	Net Worth (A + B)	400 lakhs	240 lakhs
E	BV (Net worth / No)	40 per share	32 per share
F	Market Capitalization	500 lakhs	750 lakhs
G	MPS (Market Cap / No)	50	100
H	P / E Ratio	10	5
I	EPS (MPS / PE)	5	20
J	Promoters holdings	4.75 lakhs	5 lakhs
K	% of Promoters Holding	47.50%	66.66%
L	Earnings after tax	50	150

- 1) Swap Ratio

Basis	Efficient	Healthy			Swap
EPS	5	20	20/5	4×0.4	1.6
BV	40	32	32/40	0.8×0.25	0.2
MPS	50	100	100 / 50	2×0.35	0.7
Total					2.5

- 2) Promoters Holding post merger

	Pre merger	Post Merger
Total Shares	10 lakhs	28.75 [(10 + 18.75 (7.5 x 2.5))]
Promoters holding	4.75	17.25 [4.75 + (5 x 2.5)]
Promoters holding		
= 17.25/4.75 × 100		
= 60%		

- 3) EPS of the Merged Firm Total

Earnings		
Efficient Ltd.	50	
Healthy Ltd.	<u>150</u>	200
		$EPS = 200/28.75 = 6.957$

Total No

Efficient Ltd	10	
Healthy Ltd	<u>18.75</u>	28.75

- 4) MPS of the merged firm

= EPS × PE Ratio

$$= 6.957 \times 10$$

$$= \text{Rs.}69.565$$

5) Market Capitalization = MPS \times No of shares

$$= 69.565 \times 28.75$$

$$= 2000 \text{ lakhs}$$

6) Free float market Capitalization

It means shares which are floating in market, it means market cap excluding promoters holding. Promoters holding are 60% and therefore free float is 40%.

$$= 2000 \times 40\%$$

$$= 800 \text{ lakhs}$$

Question 42

Nov 2015 - Paper

XYZ Ltd. wants to purchase ABC Ltd. by exchanging 0.7 of its share for each share of ABC Ltd. Relevant financial data are as follows:

Equity shares outstanding	10,00,000	4,00,000
EPS (Rs.)	40	28
Market Price per share (Rs.)	250	160

- (i) Illustrate the impact of merger on EPS of both the companies.
- (ii) The management of ABC Ltd. has quoted a share exchange ratio of 1:1 for the merger. Assuming that P/E ratio of XYZ Ltd. will remain unchanged after the merger, what will be the gain from merger for ABC Ltd.?
- (iii) What will be the gain/loss to shareholders of XYZ Ltd.?
- (iv) Determine the maximum exchange ratio acceptable to shareholders of XYZ Ltd.

Solution :

(a)

	XYZ Ltd.	ABC Ltd.
Equity shares outstanding (Nos.)	10,00,000	4,00,000
EPS	Rs.40	Rs.28
Profit	Rs.4,00,00,000	Rs.1,12,00,000
PE Ratio	6.25	5.71
Market Price per share	Rs.250	Rs.160

(b) EPS after merger

No. of shares to be issues ($4,00,000 \times 0.70$)	2,80,000
Existing Equity shares outstanding	10,00,000
Equity shares outstanding after merger	12,80,000
Total Profit (Rs.4,00,00,000 + Rs.1,12,22,222)	Rs.5,12,00,000
EPS	Rs.40

- (i) Impact of merger on EPS of both the companies

	XYZ Ltd.	ABC Ltd.
EPS after Merger	Rs.40	Rs.28
EPS before Merger	Rs.40	Rs.28*
	Nil	Nil

*Rs40 x 0.70

- (ii) Gain from the Merger if exchange ratio is 1:1

No. of shares to be issues	4,00,000
Existing Equity shares outstanding	10,00,000
Equity shares outstanding after merger	14,00,000
Total Profit (Rs.4,00,00,000 + Rs.1,12,22,222)	Rs.5,12,00,000
EPS	Rs.36.57
Market Price of Share (Rs.36.57 x 6.25)	Rs.228.56
Market Price of Share before Merger	Rs.160.00
Impact (Increase/Gain)	Rs.68.56

- (iii) Gain/Loss from the Merger to the shareholders of XYZ Ltd.

Market Price of Share	Rs.228.56
Market Price of Share before Merger	Rs.250.00
Loss from the merger (per share)	Rs.21.44

- (iv) Maximum Exchange Ratio acceptable to XYZ Ltd. shareholders

	Rs.Lakhs
Market Value of Merged Entity (Rs.228.57 x 14,00,000)	3199.98
Less: value acceptable to shareholders of XYZ Ltd.	2500
Value of merged entity available to shareholders of ABC Ltd.	699.98
Market Price per share	250
No. of shares to be issued to the shareholders of ABC Ltd. (Lakhs)	2.80

Thus maximum ratio of issue shall be 2.80:4.00 or 0.70 share of XYZ Ltd. for one share of ABC Ltd.

Question 43**May 2016 – RTP**

Simpson Ltd. is considering a merger with Wilson Ltd. The data below are in the hands of both Board of Directors The issue at hand is how many shares of Simpson should be exchanged for Wilson Ltd. Both boards are considering three possibilities 20,000, 25,000 and 30,000 shares. You are required to construct a table demonstrating the potential impact of each scheme on each set of shareholders:

		Simpson Ltd.	Wilson Ltd.	Combined Post merger Firm 'A'
1	Current earnings per year	2,00,000	1,00,000	3,50,000
2	Share outstanding	50,000	10,000	?

3	Earnings per share (Rs.) (1/2)	4	10	?
4	Price per share (Rs.)	40	100	?
5	Price-earnings ratio (4/3)	10	10	10
6	Value of Firm (Rs.)	20,00,000	10,00,000	35,00,000
7	Expected annual growth rate in earnings in foreseeable future	0	0	0

Solution :

The following table demonstrates the potential impact of the three possible schemes, on each set of shareholders:-

No. of Simpson Lts.'s shares issued to shareholders of Wilson Ltd.	Exchange ratio [(1)/10, 000 shares of Wilson Ltd.]	No. of Simpson Ltd.'s shares outstanding after merger [50,000 + (1)]	Fraction of Simpson Ltd. (post merger) owned by Wilson Ltd. Shareholders [(1)/(3)]	Value of shares owned by Wilson Ltd.'s shareholders [(4) x 35,00,000]	Fraction of Simpson Ltd. (combined Post-merger owned by Simpson Ltd.'s shareholders) [50,000/(3)]	Value of shares owned by Simpson Ltd.'s shareholders [(6) x 35,00,000]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
20,000	2	70,000	2/7	10,00,000	5/7	25,00,000
25,000	2.5	75,000	1/3	11,66,667	2/3	23,33,333
30,000	3	80,000	3/8	13,12,500	5/8	21,87,500

Thus from above it is clear that except case of exchange ratio of 20,000 shares, in remaining cases the value of shares will increase for both companies.

Question 44

May 2016 – Paper

The CEO of a company thinks that shareholders always look for EPS. Therefore he considers maximization of EPS as his company's objective. His company's current Net Profits are Rs.80.00 lakhs and P/E multiple is 10.5. He wants to buy another firm which has current income of Rs.15.75 lakhs & P/E multiple of 10.

What is the maximum exchange ratio which the CEO should offer so that he could keep EPS at the current level, given that the current market price of both the acquirer and the target company are Rs.42 and Rs.105 respectively?

If the CEO borrows funds at 15% and buys out Target Company by paying cash, how much should he offer to maintain his EPS? Assume tax rate of 30%.

Solution :

(a)

	Acquired Company	Target Company
Net Profit	Rs.80 lakhs	Rs.15.75 lakhs
PE Multiple	10.50	10.00
Market Capitalization	Rs.840 lakhs	Rs.157.50 lakhs

Market Price	Rs.42	Rs.105
No. of shares	20 lakhs	1.50 lakhs
EPS	Rs.4	Rs.10.50

Maximum Exchange Ratio 4 : 10.50 or 1 : 2.625

Thus, for every one share of Target Company 2.625 shares of Acquirer Company.

- (b) Let x lakhs be the amount paid by Acquirer company to Target Company. Then to maintain same EPS i.e. Rs.4 the number of shares to be issued will be:

$$\frac{(80\text{lakhs} + 15.75\text{lakhs}) - (0.70 \times 15\% \times x)}{20\text{lakhs}} = 4$$

$$\frac{95.75 - 0.105x}{20} = 4$$

$$X = \text{Rs.150 lakhs}$$

Thus, Rs.150 lakhs shall be offered in cash to Target Company to maintain same EPS.

Question 45

Nov 2016 – RTP

XYZ, a large business house is planning to acquire ABC another business entity in similar line of business. XYZ has expressed its interest in making a bid for ABC. XYZ expects that after acquisition the annual earning of ABC will increase by 10%. Following information, ignoring any potential synergistic benefits arising out of possible acquisitions, are available:

	XYZ	ABC	Proxy entity for XYZ & ABC in the same line of business
Paid up Capital (Rs.Crore)	1025	106	-
Face value of share is Rs.10			
Current share price	Rs.129.60	Rs.55	-
Debt: Equity (at market values)	1 : 2	1 : 3	1 : 4
Equity Beta	-	-	1 : 1

Assume Beta of debt to be zero and corporate tax rate as 30%, determine the Beta of combined entity.

Solution :

$$\beta_{\text{ungeared for the proxy company}} = 1.1 \times 4 / [4 + \{1 - 0.3\}] = 0.9362$$

$$0.9362 = \beta_{\text{Geared of XYZ}} \times 2 / [2 + \{1 - 0.3\}]$$

$$\beta_{\text{Geared of XYZ}} = 1.264$$

$$0.9362 = \beta_{\text{Geared of XYZ}} \times 3 / [3 + \{1 - 0.3\}]$$

$$\beta_{\text{Geared of XYZ}} = 1.155$$

	XYZ	ABC	Total
No. of share (1)	Rs. 1025 crore Rs. 10 = Rs.102.5 crore	Rs. 106 crore Rs. 10 = Rs.10.60 crore	-
Current share price (2)	Rs.129.60	Rs.55	-

Market values (3) = (1) × (2)	Rs.13284 crore	Rs.583 crore	Rs.13867 crore
Equity beta (4)	14.264	1.155	
Market values x Equity beta	Rs.16790.976 crore	Rs.673.365 crore	Rs.17464.341 crore

$$\begin{aligned} \text{Portfolio Beta after Merger} &= 17,464.341/13,867 \\ &= 1.26 \end{aligned}$$

Question 46**May 2017 – Paper**

XML bank was established in 2001 and doing banking business in India. The bank is facing very critical situation. There are problems of Gross NPA (Non- Performing Assets) at 40% & CAR/CRAR (Capital Adequacy Ratio/Capital. Risk Weight Asset Ratio) at 2%. The net worth of the bank is not good. Shares are not traded regularly. Last week, it was traded @ Rs.4 per share.

RBI Audit suggested that bank has either to liquidate or to merge with other bank.

ZML Bank is professionally managed bank with low gross NPA of 5%. It has net NPA as 0% and CAR at 16%. Its share is quoted in the market @ Rs.64 per share. The Board of Directors of ZML Bank has submitted a proposal to RBI for takeover of bank XML on the basis of share exchange ratio.

The Balance Sheet details of both the banks are as follows:

PARTICULARS	XML Bank (Rs.) (Amount in Crores)	ZML Bank (Rs.) (Amount in Crores)
Liabilities		
Paid up share capital (Rs.10)	70	250
Reserve and Surplus	35	2,750
Deposits	2,000	20,000
Other Liabilities	445	1,250
Total Liabilities	2,550	24,250
Assets	200	
Cash in hand and with RBI	0	1,250
Balance with other banks	550	1,000
Investments	1,750	7,500
Advances	50	13,500
Other Assets	2,550	1,000
Total Assets	2,550	24,250

It was decided to issue shares at Book Value of ZML Bank to the shareholders of XML Bank. All Assets & Liabilities are to be taken over at Book Value.

For the Swap Ratio, weights assigned to different parameters are as follows:

Gross NPA	40%
CAR	10%
Market Price	40%
Book Value	10%

You are required to :

- Calculate swap ratio based on above rates.
- Calculate number of shares are to be issued.
- Prepare Balance Sheet after Merger

Solution :**Calculation of book value per share :**

	XML	ZML
Assets	2550	24,250
Deposits	(2000)	(20,000)
Other Liability	(445)	(1250)
Net Assets	105	3000
No. of Shares (crores)	7	25
Book value per share (Rs.)	$105 / 7 = 15$	$3000 / 25 = 120$

(a) Swap Ratio

Gross NPA	5 : 40	i.e.	$5/40 \times 40\% =$	0.05
CAR	2 : 16	i.e.	$2/16 \times 10\% =$	0.0125
Market Price	4 : 64	i.e.	$4/64 \times 40\% =$	0.0250
Book Value	15 : 120	i.e.	$15/120 \times 10\% =$	0.0125
				0.1

Thus for every share of Bank XML 0.1 share of Bank ZML shall be issued.

(b) No. of equity shares to be issued:

$70/10 \times 0.1 = 0.7$ crore shares
= 70 lakh number of shares

(c) Balance Sheet after Merger

Calculation of Capital Reserve

Book Value of Shares	Rs.105.00 cr
Value of Shares issued	Rs.7.00 cr
Capital Reserve	Rs.98.00 cr

Balance Sheet as at date after merger

	Rs.in Cr		Rs.in Cr
Paid up Share Capital	257	Cash in Hand & RBI	1450
Reserves & Surplus	2750	Balance with other banks	1000
Capital Reserve	98	Investment	8050
Deposits	22000	Advances	15250
Other Liabilities	1695	Other Assets	1050
	26,800		26,800

Question 47**Nov 2017 – RTP**

Teer Ltd. is considering acquisition of Nishana Ltd. CFO of Teer Ltd. is of opinion that Nishana Ltd. will be able to generate operating cash flows (after deducting necessary capital expenditure) of Rs.10 crore per annum for 5 years.

The following additional information was not considered in the above estimations.

(i) Office premises of Nishana Ltd. can be disposed of and its staff can be relocated in Teer Ltd.'s

office not impacting the operating cash flows of either businesses. However, this action will generate an immediate capital gain of Rs.20 crore.

- (ii) Synergy Gain of Rs.2 crore per annum is expected to be accrued from the proposed acquisition.
- (iii) Nishana Ltd. has outstanding Debentures having a market value of Rs.15 crore. It has no other debts.
- (iv) It is also estimated that after 5 years if necessary, Nishana Ltd. can also be disposed of for an amount equal to five times its operating annual cash flow.

Calculate the maximum price to be paid for Nishana Ltd. if cost of capital of Teer Ltd. is 20%. Ignore any type of taxation.

Solution :

Calculation of Maximum Price to be paid for the acquisition of Nishana Ltd.

(Rs. Crore)

Year	0	1	2	3	4	5
Operating cash flow	-	10.00	10.00	10.00	10.00	10.00
Gain on Sale of office premises	20.00	-	-	-	-	-
Synergy Benefits	-	2.00	2.00	2.00	2.00	2.00
Disposal of Nishana Ltd.	-	-	-	-	-	50.00
Net cash flow	20.00	12.00	12.00	12.00	12.00	62.00
PVF @ 20%	1	0.833	0.694	0.579	0.482	0.402
Present value	20.00	10.00	8.328	6.948	5.784	24.924

Total of Present value	75.984
Less: Market Value of Debentures	(15000)
	<u>60.984</u>

Thus, the maximum price to be paid for acquisition of Nishana Ltd. Rs.60.984 crore.

Question 48

Nov 2017 – RTP

AB Ltd., is planning to acquire and absorb the running business of XY Ltd. The valuation is to be based on the recommendation of merchant bankers and the consideration is to be discharged in the form of equity shares to be issued by AB Ltd. As on 31.3.2006, the paid up capital of AB Ltd. consists of 80 lakhs shares of Rs.10 each. The highest and the lowest market quotation during the last 6 months were Rs.570 and Rs.430. For the purpose of the exchange, the price per share is to be reckoned as the average of the highest and lowest market price during the last 6 months ended on 31.3.06.

XY Ltd.'s Balance Sheet as at 31.3.2006 is summarised below:

	Rs.in lakhs
Sources	
Share Capital	
20 lakhs equity shares of Rs.10 each fully paid	200
20 lakhs equity shares of Rs.10 each fully paid	50
Loans	100
Total	350

Uses	
Fixed Assets (Net)	150
Net Current Assets	200
Total	350

An independent firm of merchant bankers engaged for the negotiation, have produced the following estimates of cash flows from the business of XY Ltd.:

Year Ended	By way of after tax earnings for equity	Rs.lakhs
31.3.07	do	105
31.3.08	Do	120
31.3.09	Do	125
31.3.10	Do	120
31.3.11	Terminal value estimate	100
		200

It is the recommendation of the merchant banker that the business of XY Ltd. may be valued on the basis of the average of (i) Aggregate of discounted cash flows at 8% and (ii) Net assets value. Present value factors at 8% for years

1-5: 0.93 0.86 0.79 0.74 0.68

You are required to:

- Calculate the total value of the business of XY Ltd.
- The number of shares to be issued by AB Ltd.; and
- The basis of allocation of the shares among the shareholders of XY Ltd.

Solution :

Price/share of AB Ltd. for determination of number of shares to be issued: (Rs.570 + Rs.430)/2	Rs.	500
Value of XY Ltd based on future cash flow capitalization (105 × 0.93)+(120 × 0.86)+(125 × 0.79)+(120 × 0.74) × (300 × 0.68)	Rs.lakhs	592.4
Value of XY Ltd based on net assets	Rs.lakhs	250
Average value (592.40+250)/2		421.2
No. of shares in AB Ltd to be issued Rs.4,21,20,000/500	Nos.	84240
Basis of allocation of shares		
Fully paid equivalent shares in XY Ltd. (20 + 5) lakhs		2500000
Distribution to fully paid shareholders 84240 × 20/25		67392
Distribution to partly paid shareholders 84240 – 67392		16848

Question 49

Nov 2017 – Paper

East Co. Ltd. is studying the possible acquisition of Fost Co. Ltd. by way of merger. The following data are available in respect of the companies.

	East Co. Ltd	Fost Co. Ltd.
Earnings after tax (Rs.)	2,00,000	60,000
No. of equity shares	40,000	10,000
Market value per share (Rs.)	15	12

- If the merger goes through by change of equity share and the exchange ratio is based on the

current market price, what are the new earnings per share for East Co. Ltd.?

- (ii) Fort Co. Ltd. wants to be sure that the merger will not diminish the earnings available to its shareholders. What should be the exchange ratio in that case?

Solution :

- (i) **Calculation of new EPS of East Co. Ltd.**

No. of equity shares to be issued by East Co. Ltd. to Fost Co. Ltd.
 $= 10,000 \text{ shares} \times 12/15$
 $= 8,000 \text{ shares}$

Total no. of shares in East Co. after acquisition of Fost Co. Ltd.
 $= 40,000 + 8,000$
 $= 48,000$

Total earnings after tax [after acquisition]
 $= 2,00,000 + 60,000$
 $= 2,60,000$

EPS $= 2,60,000/48,000$
 $= \text{Rs.}5.42$

- (ii) **Calculation of exchange ratio which would not diminish the EPS of Fost Co. Ltd. after its merger with East Co. Ltd.**

Current EPS
 East Co. Ltd. $= 2,00,000/40,000$
 $= \text{Rs.}5$

Fost Co. Ltd. $= 60,000/10,000$
 $= \text{Rs.}6$

Exchange ratio $= 6/5$
 $= 1.20$

Cross Tally

No. of new shares to be issued by East Co. Ltd. to Fost Co. Ltd.
 $= 10,000 \times 1.20 = 12,000 \text{ shares}$

Total number of shares of East Co. Ltd. after acquisition
 $= 40,000 + 12,000 = 52,000 \text{ shares}$

EPS [after merger] $= 2,60,000/52,000$
 $= \text{Rs.}5$

Total earnings in East Co. Ltd. available to new shareholders of Fost Co. Ltd. = $12,000 \times \text{Rs. } 5$
 = Rs.60,000

Recommendation: The exchange ratio (6 for 5) based on market shares is beneficial to shareholders of 'Fost' Co. Ltd.

Question 50**May 2018 – RTP**

The following information is provided related to the acquiring Firm Mark Limited and the target Firm Mask Limited:

	Firm Mark Limited	Firm Mask Limited
Earning after tax (Rs.)	2,000 lakhs	400 lakhs
Number of shares outstanding	200 lakhs	100 lakhs
P/E Ratio (times)	10	5

Required:

- What is the Swap Ratio based on current market prices?
- What is the EPS of Mark Limited after acquisition?
- What is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged?
- Determine the market value of the merged firm.
- Calculate gain/loss for shareholders of the two independent companies after acquisition.

Solution :

Particulars	Mark Ltd.	Mask Ltd.
EPS	$2,000/200 = \text{Rs.}10$	$400/100 = \text{Rs.}4$
Market Price	$10 \times 10 = 100$	$4 \times 5 = 20$

- The Swap ratio based on current market price is
 $20/100 = 0.2$ or 1 share of Mark Ltd. for 5 shares of mark Ltd.
 No. of shares to be issued = $100 \text{ lakh} \times 0.2$
 = 20 lakhs
- EPS after merger = $2,000 + 400/200 + 20$
 = Rs.10.91
- Expected market price after merger assuming P/E 10 times.
 = $\text{Rs.}10.90 \times 10$
 = Rs.109.10
- Market value of merged firm
 = $\text{Rs.}109.10 \text{ market price} \times 220 \text{ lakhs shares}$
 = 240.02 crores

(v)	Gain from the merger	
	Post-merger market value of the merged firm	Rs.240.02 crores
	Less: Pre-merger market value	
	Mark Ltd. 200 Lakhs x Rs.100 = 200 crores	
	Mask Ltd. 100 Lakhs x Rs.20 = 20 crores	<u>Rs.220.00 crores</u>
	Gain from merger	<u>Rs.20.02 crores</u>

Appropriation of gains from the merger among shareholders:

Particulars	Mark Ltd.	Mask Ltd.
Post-merger value	218.20 crores	21.82 crores
Less: Pre-merger market value	200 crores	20.00 crores
Gain to Shareholders	18.20 crores	1.82 crores

Question 51

May 2018 – Paper

Intel Ltd., promoted by a Trans National Company, is listed on the stock exchange.

The value of the floating stock is Rs.45 crores. The Market Price per Share (MPS) is Rs.150.

The capitalisation rate is 20 percent.

The promoters holding is to be restricted to 75 per cent as per the norms of listing requirement. The Board of Directors have decided to fall in line to restrict the Promoters' holding to 75 percent by issuing Bonus Shares to minority shareholders while maintaining the same Price Earnings Ratio (P/E).

You are required to calculate:

- Bonus Ratio;
- MPS after issue of Bonus Shares; and
- Free float Market capitalisation after issue of Bonus Shares

Solution :

1. No. of Bonus Shares to be issued:

Free Float Capitalization	= Rs.45 crore
Market Price per Share	= Rs.150
Shares of Minority	= $45/150$
	= 30 lacs
Minority Share Holding (100% - 80 %*)	= 20%
Hence Total shares	= $30/0.20$
	= 150 lacs
Promoters holding 80%,	= 120 lacs shares
Shares remains the same, but holding % to be taken as 75%	
Hence Total shares	= $120/0.75$
	= 160 lacs
Shares of Minority	= 160 – 102

= 40 lacs

Bonus 10 lacs for 30 lacs i.e. 1 shares for 3 shares held.

2. Market price after Bonus issue:

Let us compute PE with given ke as follows:

$$\begin{aligned} \text{PE} &= 1/K_e \\ &= 1/120 \\ &= 5 \end{aligned}$$

Market Price Given = Rs.150
Hence EPS will be (150/5) = Rs.30
Total No. of shares before bonus issue = 150 lacs

Accordingly, Total PAT shall be (30/150) = Rs.4,500 lacs

Total No. of shares after bonus issue = 150 + 10

= 160 lacs

EPS after Bonus Issue = (4500/160) = Rs.28.125

Market Price after Bonus Issue = Rs.28.125 × 5

= Rs.140.63

3. Free Float Capitalization after Bonus Issue

Rs.140.63 × 40 lacs

= Rs.5,625.20 lacs i.e. Rs.56.252 crore

Note : Since the information regarding the promoters' holding is missing in the question, above solution is based on assumption of promoter's holding as 80%. However, student can assume any % other than 80% and solve the question accordingly.

Question 52

May 2018 – Paper

During the audit of the Weak Bank (W), RBI has suggested that the Bank should either merge with another bank or may close down. Strong Bank (S) has submitted a proposal of merger of Weak Bank with itself. The relevant information and Balance Sheets of both the companies are as under:

Particulars	Weak Bank (W)	Strong Bank (S)	Assigned Weights (%)
Gross NPA (%)	40	5	30
Capital Adequacy Ratio (CAR/Capital risk Weight Asset Ratio)	5	16	28
Market price per share (MPS)	12	96	32
Book Value			10
Trading on Stock Exchange	Irregular	Frequent	

Balance Sheet

(Rs.in lakhs)

Particulars	Weak Bank (W)	Strong Bank (S)
Paid up share capital (Rs.10 per share)	150	500
Reserves & Surplus	80	5,500
Deposits	4,000	44,000
Other liabilities	890	2,500
Total Liabilities	5,120	52,500
Cash in hand & with RBI	400	2,500
Balance with other banks	-	2,000
Investment	1,100	19,000
Advance	3,500	27,000
Other assets	70	2,000
Preliminary expenses	50	-
Total Assets	5,120	52,500

You are required to

- Calculate Swap ratio based on the above weights:
- Ascertain the number of Shares to be issued to Weak Bank;
- Prepare Balance Sheet after merger; and
- Calculate CAR and Gross NPA of Strong Bank after merger.

Solution :

(a) Swap Ratio

Gross NPA	5 : 40	$5/40 \times 30\%$	0.0375
CAR	5 : 16	$5/16 \times 28\%$	0.0875
Market Price	12 : 96	$12/96 \times 32\%$	0.0400
Book value per share	12 : 120	$12/120 \times 10\%$	0.0100
			0.1750

Thus for every share of Weak Bank, 0.1750 share of Strong Bank shall be issued.

Calculation of Book Value per Share

Particulars	Weak Bank (W)	Strong Bank (S)
Share Capital Reserves & Surplus	150	500
	80	5,500
	230	6,000
Less: Preliminary Expenses	50	-
Net worth or book value	180	6,000
No. of outstanding shares Book value per share (Rs.)	15	50
	12	120

(b) No. of equity shares to be issued:

$$150/10 \times 0.1750 = 2.625 \text{ lakh shares}$$

(c) Balance sheet after merger

Calculation of Capital Reserve

Book value of Shares	Rs.180.00 lac
Less: Value of Shares issued	<u>Rs. 26.25 lac</u>
Capital Reserve	<u>Rs. 153.75 lac</u>

Balance Sheet

	Rs.lacs		Rs.lacs
Paid up share capital	526.25	Cash in hand & RBI	2,900.00
Reserves & Surplus	5,500.00	Balance with other banks	2,000.00
Capital Reserve	153.75	Investment	20,100.00
Deposits	48,000.00	Advance	30,500.00
Other liabilities	3,390.00	Other assets	2,070.00
	57570		57570

(d) Calculation CAR & Gross NPA % of Bank 'S' after merger

CAR/CRWAR = Total Capital/Risky Weighted Assets

	Weak Bank	Strong Bank	Merged
	5%	16%	
Total Capital	Rs.180 lac	Rs.6,000 lac	Rs.6,180 lac
Risky Weighted Assets	Rs.3,600 lac	Rs.37,500 lac	Rs.41,100 lac

$$\text{CAR} = \frac{6180}{41100} \times 100 = 15.04\%$$

GNPA Ratio = Gross NPA/Gross Advance x 100

	Weak Bank	Strong Bank	Merged
GNPA (Given)	0.4	0.05	
	$0.40 = \frac{\text{GNPA}_R}{\text{Rs.3500 lac}}$	$0.05 = \frac{\text{GNPA}_S}{\text{Rs.27000 lac}}$	
Gross NPA	Rs.1,400 lac	Rs.1,350 lac	Rs.2,750 lac

Question 53**May 2018 (New) – RTP**

T Ltd. and E Ltd. are in the same industry. The former is in negotiation for acquisition of the latter. Important information about the two companies as per their latest financial statements is given below:

	T Ltd.	E Ltd.
Rs.10 Equity shares outstanding	12 lakhs	6 lakhs
Debt:		
10% Debentures	580	-
12..5% Institutional Loan	-	240
Earning before interest, depreciation and tax (EBIDAT)	400.86	115.71
Market Price/Share	220.00	110.11

T Ltd. plans to offer a price for E Ltd., business as a whole which will be 7 times EBIDAT reduced by outstanding debt, to be discharged by own shares at market price.

E Ltd. is planning to seek one share in T Ltd. for every 2 shares in E Ltd. based on the market price. Tax ate for the two companies may be assumed as 30%.

CALCULATE the following under both alternatives - T Ltd.'s offer and E Ltd.'s plan:

- (i) Net consideration payable.
- (ii) No. of shares to be issued by T Ltd.
- (iii) EPS of T Ltd. after acquisition.
- (iv) Expected market price per share of T Ltd. after acquisition.

Note: Calculations (except EPS) may be rounded off to 2 decimals in lakhs

Solution :

As per T Ltd.'s offer

	Rs.in lakhs
(i) Net Consideration Payable	
7 times EBIDAT, i.e. 7 x Rs.115.71 lakh	809.97
Less: Debt	240.00
	569.97
(ii) No. of shares to be issued by T Ltd.	
Rs.569.97 lakh/Rs.220 (rounded off) (Nos.)	2,59,000
(iii) EPS of T Ltd after acquisition	
Total EBIDT (400.86 lakh + 115.70 lakh)	516.57
Less: Interest (58 lakh + 30 lakh)	88.00
	428.57
Less: 30% Tax	128.57
Total Earnings (NPAT)	300.000
Total no. of shares outstanding (12 lakh + 2.59 lakh)	14.59 lakh
EPS (300 lakh/14.59 lakh)	Rs.20.56

(iv) Expected Market Price:

	Rs.in lakhs
Pre-acquisition P/E multiple:	
EBIDAT	400.86
Less: Interest (500 x 10/100)	58.00
	342.86
Less: 30% Tax	102.86
	240.00
No. of shares (lakhs)	12.00
EPS	Rs.20.00
Hence, PE multiple 220/20	11
Expected market price after acquisition (20.56 x 11)	Rs.226.16

As per E Ltd.'s Plan

	Rs.in lakhs
(i) Net Consideration Payable	

	6 lakhs shares x Rs.110	660
(ii)	No. of shares to be issued by T Ltd.	
	Rs.660 lakh/Rs.220	3,00,000
(iii)	EPS of T Ltd after acquisition	
	NPAT (as per earlier calculations)	300
	Total no. of shares outstanding (12 + 3)	15,00,000
	Earnings per share (EPS) [300/15]	20.00
(iv)	Expected Market Price (20 x 11)	220.00

Question 54

May 2018 (New) – Paper

Tatu Ltd. wants to takeover Mantu Ltd. and has offered a swap ratio of 1:2 (0.5 shares for every one share of Mantu Ltd.). Following information is provided

	Tatu Ltd.	Manu Ltd.
Profit after tax	Rs.24,00,000	Rs.4,80,000
Equity shares outstanding (Nos.)	8,00,000	2,40,000
EPS	Rs.3	Rs.2
PE Ratio	10 times	7 times
Market price per share	Rs.30	Rs.14

You are required to calculate:

- The number of equity shares to be issued by Tatu Ltd. for acquisition of Mantu Ltd.
- What is the EPS of Tatu Ltd. after the acquisition?
- Determine the equivalent earnings per share of Mantu Ltd.
- What is the expected market price per share of Tatu Ltd. after the acquisition, assuming its PE multiple remains unchanged?
- Determine the market value of the merged firm.

Solution :

- (i) **The number of shares to be issued by Tatu Ltd:**

The exchange ratio is 0.5

So, New shares = 2,40,000 × 0.5 = 1,20,000 shares.

- (ii) **EPS of Tatu Ltd. after acquisition:**

Total Earnings	(24,00,000 + 4,80,000)	Rs.28,80,000
No. of shares	(8,00,000 + 1,20,000)	9,20,000
EPS	(28,00,000)/(9,20,000)	Rs.3.13

- (iii) **Equivalent EPS of Mantu Ltd:**

No. of new shares	0.5
EPS	Rs.3.13
Equivalent EPS (Rs.3.13 x 0.5)	Rs.1.57

- (iv) **New Market Price of Tatu Ltd. (P/E remaining unchanged)**

Present P/E Ratio of A Ltd.	10 times
Expected EPS after merger	Rs.3.13
Expected Market Price (Rs.3.13 x 10)	Rs.31.30

(v) Market Value of merged firm:

Total Number of Shares	9,20,000
Expected Market Price	Rs.31.30
Total value (9,20,000 x 31.30)	Rs.2,87,96,000

Question 55**Nov 2018 – RTP**

T Ltd. Recently made a profit of Rs.50 crore and paid out Rs.40 crore (slightly higher than the average paid in the industry to which it pertains). The average PE ratio of this industry is 9. As per Balance Sheet of T Ltd., the shareholder's fund is Rs.225 crore and number of shares is 10 crore. In case company is liquidated, building would fetch Rs.100 crore more than book value and stock would realize Rs.25 crore less.

The other data for the industry is as follows:

Projected Dividend Growth	4%
Risk Free Rate of Return	6%
Market Rate of Return	11%
Average Dividend Yield	6%

The estimated beta of T Ltd. is 1.2. You are required to calculate value of T Ltd. using

- (i) P/E Ratio
- (ii) Dividend Yield
- (iii) Valuation as per:
 - (1) Dividend Growth Model
 - (2) Book Value
 - (3) Net Realizable Value

Solution :

- (i) Rs.50 crore x 9
= Rs.450 crore
- (ii) Rs.50 crore x (0.80/0.06)
= Rs.666.67
- (iii) (1) $K_e = 6\% + 1.2(11\% - 6\%)$
= 12%
= 40 crore $\times 1.04/0.12 - 0.4$
= Rs.520 crore
- (2) Rs.225 crore
- (3) Rs.225 crore + Rs.100 crore – Rs.25 crore = 300 crore

Question 56**Nov 2018 – RTP**

The CEO of a company thinks that shareholders always look for EPS. Therefore, he considers maximization of EPS as his company's objective. His company's current Net Profits are Rs.80.00 lakhs and P/E multiple is 10.5. He wants to buy another firm which has current income of Rs.15.75 lakhs & P/E multiple of 10.

What is the maximum exchange ratio which the CEO should offer so that he could keep EPS at the current level, given that the current market price of both the acquirer and the target company are Rs.42 and Rs.105 respectively?

If the CEO borrows funds at 15% and buys out Target Company by paying cash, how much should he offer to maintain his EPS? Assume tax rate of 30%.

Solution :

(i)

	Acquirer Company	Target Company
Net Profit	Rs.80 lakhs	Rs.15.75 lakhs
PE Multiple	10.5	10
Market Capitalization	Rs.840 lakhs	Rs.157.50 lakhs
Market Price	Rs.42	Rs.105
No. of Shares	20 lakhs	1.50 lakhs
EPS	Rs.4	Rs.10.50

Maximum Exchange Ratio 4 : 10.50 or 1 : 2.625

Thus, for every one share of Target Company 2.625 shares of Acquirer Company.

(ii) Let x lakhs be the amount paid by Acquirer company to Target Company. Then to maintain same EPS i.e. Rs.4 the number of shares to be issued will be:

$$(80 \text{ lakhs} + 15.75 \text{ lakhs}) - 0.70 \times 15\% \times x/20 \text{ lakhs} = 4$$

$$95.75 - 0.015x/20 = 4$$

$$x = \text{Rs.150 lakhs}$$

Thus, Rs.150 lakhs shall be offered in cash to Target Company to maintain same EPS.

Question 57

Nov 2018 – RTP

The following is the Balance sheet of Grape Fruit Company Ltd. as at 31st March 2011.

Liabilities	(Rs.in lakhs)	Assets	(Rs.in lakhs)
Equity shares of Rs.100 each	600	Land and Building	200
14% preference shares of	200	Plant and Machinery	300
Rs.100/- each		Furniture and Fixtures	50
13% Debentures	200	Inventory	150
Debenture interest accrued	26	Sundry debtors	70
and payable		Cash at bank	130
Loan from Bank	74	Preliminary expenses	10
Trade creditors	340	Cost of issue of debentures	5
		Profit and loss account	525
	1440		1440

The Company did not perform well and has suffered sizable losses during the last few years. However, it is felt that the company could be nursed back to health by proper financial restructuring. Consequently the following scheme of reconstruction has been drawn up:

- (i) Equity shares are to be reduced to Rs.25/- per share, fully paid up;
- (ii) Preference shares are to be reduced (with coupon rate of 10%) to equal number of shares of Rs.50 each, fully paid up.
- (iii) Debenture holders have agreed to forgo the accrued interest due to them. In the future, the rate of interest on debentures is to be reduced to 9 percent.
- (iv) Trade creditors will forego 25 percent of the amount due to them.
- (v) The company issues 6 lakh of equity shares at Rs.25 each and the entire sum was to be paid on application. The entire amount was fully subscribed by promoters.
- (vi) Land and Building was to be revalued at Rs.450 lakhs, Plant and Machinery was to be written down by Rs.120 lakhs and a provision of Rs.15 lakhs had to be made for bad and doubtful debts.

Required:

- (i) Show the impact of financial restructuring on the company's activities.
- (ii) Prepare the fresh balance sheet after the reconstructions is completed on the basis of the above proposals.

Solution :

Impact of Financial Restructuring

- (i) Benefits to Grape Fruit Ltd.

- (a) Reduction of Liabilities payable

Reduction in equity share capital (6 lakh shares × Rs.75 per share)	450
Reduction in preference share capital (2 lakh shares × Rs.50 per share)	100
Waiver of outstanding debenture Interest	26
Waiver from trade creditors (Rs.340 lakhs × 0.25)	85
Total	661

- (b) Revaluation of Assets

Appreciation of Land and Building (Rs.450 – Rs.200 lakhs)	250
Total (A)	911

- (ii) Amount of Rs.911 lakhs utilized to write off losses, fictitious assets and over- valued assets.

Writing off profit and loss account	525
Cost of issue of debentures	5
Preliminary expenses	10
Provision for bad and doubtful debts	15
Revaluation of Plant and Machinery (Rs.300 lakhs – Rs.180 lakhs)	120
Total (B)	675
Capital Reserve (A) – (B)	236

(iii) Balance sheet of Grape Fruit Ltd. as at 31st March 2011 (after re- construction)

(Rs.in lakhs)

Liabilities	Amount	Assets		Amount
12 lakhs equity shares of Rs.25/- each	300	Land & Building		450
10% Preference shares of Rs.50/- each	100	Plant & Machinery		180
Capital Reserve	236	Furniture & Fixtures		50
9% debentures	200	Inventory		150
Loan from Bank	74	Sundry Debtors	70	
Trade Creditors	225	Prov. For Doubtful	<u>15</u>	55
		Debts		
		Cash-at-Bank (Balancing figure)		280
	1165			1165

*Opening Balance of Rs.130/- lakhs + Sale proceeds from issue of new equity shares Rs.150/- lakhs.

Question 58

Nov 2018 – Paper – 12 Marks

C Ltd. & D Ltd. are contemplating a merger deal in which C Ltd. will acquire D Ltd. The relevant information about the firms are given as follows:

	C Ltd.	D Ltd.
Total Earnings (E) (in millions)	Rs..96	Rs.30
Number of outstanding share (S) (in millions)	20	14
Earnings per share (EPS) (Rs.)	4.8	2.143
Price earning ratio (P/E)	8	7
Market Price per share (P) (Rs.)	38.4	15

- (i) What is the maximum exchange ratio acceptable to the shareholders of C Ltd., if the P/E ratio of the combined firm is 7?
- (ii) What is the minimum exchange ratio acceptable to the shareholders of D Ltd., if the P/E ratio of the combined form is 9?

Solution

1. Maximum exchange ratio (from C's perspective)

MPS of C should not fall

- | | | |
|----|--------------------------------------|----------------------|
| A. | Total Earnings = 96 + 30 = | 126 |
| B. | PE Ratio | 7 |
| C. | MV of Merged Firm | 882 (A x B) |
| D. | MPS | 38.4 to be mentioned |
| E. | No. of shares (C/D) | 22.96875 |
| F. | Existing no. of C | 20 |
| G. | No. of shares to be issued by C(E-F) | 2.96875 |

$$\therefore \text{Exchange Ratio} = \frac{2.96875}{14} = 0.21205$$

i.e. 0.21205 shares for each share

2. Minimum Exchange ratio (from D's perspective)

MPS of D should not fall

A.	Total Earnings = 96 + 30 =	126
B.	PE Ratio	9
C.	MV of Merged Firm	1134
D.	Swap Ratio	X
E.	No. of shares	20 + 14X
F.	New MPS	$\frac{1134}{20+14X}$

$$\text{So } \left(\frac{1134}{20+14X} \right) \times X = 15$$

$$\begin{aligned} X &= 15 \left(\frac{20+14X}{1134} \right) \\ X &= 15 \times \left(\frac{20}{1134} + \frac{14X}{1134} \right) \\ X &= 15 \times \frac{20}{1134} + 15 \times \frac{14X}{1134} \\ X &= 0.26455 + \frac{210X}{1134} \\ X &= 0.26455 + 0.185185X \\ 0.8148148X &= 0.26455 \\ X &= 0.3247 \end{aligned}$$

$$\begin{aligned} \therefore \text{No. of shares to be issued} &= 14 \times 0.324675 \\ &= 4.54545 \end{aligned}$$

$$\text{Total no.} = 20 + 4.54545 = 24.54545$$

Check

$$\text{MPS of merged} = \frac{1134}{24.54545} = 46.20$$

$$\text{MPS of D} = 46.20 \times 0.3247 = 15$$

Question 59

Nov 2018 (New) – Paper – 12 Marks

TK Ltd. and SK Ltd. are both in the same industry. The former is in negotiation for acquisition of the latter. Information about the two companies as per their latest financial statements are given below:

	TK Ltd.	SK Ltd.
Rs.10 Equity Shares Outstanding	24 Lakhs	12 Lakhs
Debt		
10% Debentures (Rs.Lakhs)	1160	-
12% Institutional Loan (Rs.Lakhs)	-	480
Earnings before interest, depreciation and tax (EBIDAT) (Rs.Lakhs)	800	230
Market Price/Share (Rs.)	220..	110

TK Ltd. plans to offer a price for SK Ltd. business, as a whole, which will be 7 times of EBIDAT as reduced by outstanding debt and to be discharged by own shares at market price.

SK Ltd. is planning to seek one share in TK Ltd. for every 2 shares in SK Ltd. based on the market price.

Tax rate for the two companies may be assumed as 30%.

Calculate and show the following under both alternatives - TK Ltd.'s offer and SK Ltd.'s plan :

- Net consideration Payable
- No. of shares to be issued by TK Ltd.
- EPS of TK Ltd. after acquisition.
- Expected market price per share of TK Ltd. after acquisition.
- State briefly the advantages to TK Ltd. from the acquisition.

Calculations may be rounded off to two decimal points.

Solution :

As per T Ltd.'s Offer	Rs.in lakhs
(i) Net Consideration Payable	
7 times EBIDAT, i.e. 7 x Rs.230 lakh	1610.00
Less: Debt	480.00
	1130.00
(ii) No. of shares to be issued by T Ltd	
Rs.1130 lakh/Rs.220 (rounded off) (Nos.)	5,13,636
(iii) EPS of T Ltd after acquisition	
Total EBIDT (Rs.800 lakh + Rs.230 lakh)	1030.00
Less: Interest (Rs.116 lakh + Rs.60 lakh)	176.00
	854.00
Less: 30% Tax	256.20
Total earnings (NPAT)	597.80
Total no. of shares outstanding (24 lakh + 5.14 lakh)	29.14 lakh
EPS (Rs.597.80 lakh/ 29.14 lakh)	Rs.20.51
(iv) Expected Market Price:	
	Rs.in lakhs
Pre-acquisition P/E multiple:	
EBIDAT	800.00

Less: Interest $\left(1160 \times \frac{10}{100}\right)$	116.00
	684.00
Less: 30% Tax	205.20
	478.80
No. of shares (lakhs)	24
EPS	Rs.19.95
Hence, PE multiple 220/19.95	11.03
Expected market price after acquisition (Rs.20.51 x 11.03)	Rs.226.23

As per E Ltd's Plan

(i) Net consideration payable 12 lakhs shares x Rs.110	1320.00
(ii) No. of shares to be issued by T Ltd (Rs.1320 lakhs/Rs.220)	6 lakh
(iii) EPS of T Ltd after Acquisition	
NPAT (as per earlier calculations)	597.80
Total no. of shares outstanding (24 lakhs + 6 lakhs)	30 lakh
Earning Per Share (EPS) (Rs.597.80 lakh/30 lakh)	Rs.19.93
(iv) Expected Market Price (Rs.19.93 x 11.03)	219.83

Advantages of Acquisition to T Ltd

Since the two companies are in the same industry, the following advantages could accrue:

- Synergy, cost reduction and operating efficiency.
- Better market share.
- Avoidance of competition.

Question 60

May 2019 (New) - RTP – Similar to Question 22 : Nov 2012 RTP

Question 61

May 2019 (Old) - Paper

R Ltd. and S Ltd. operating in same industry are not experiencing any rapid growth but providing a steady stream of earnings. R Ltd.'s management is interested in acquisition of S Ltd. due to its excess plant capacity. Share of S Ltd. is trading in market at Rs.3.20 each. Other data relating to S Ltd. is as follows :

Balance Sheet of S Ltd.

Liabilities	Amt. (Rs.)	Assets	Amt. (Rs.)
Current Liabilities	1,59,80,000	Current Assets	2,48,75,000
Long Term Liabilities	1,28,00,000	Other Assets	94,00,000
Reserves and Surplus	2,79,95,000	Property Plants & Equipment	3,45,00,000
Share Capital (80 Lakhs shares of Rs.1.5 each)	1,20,00,000		
Total	6,87,75,000		6,87,75,000

Particulars	R Ltd. (Rs.)	S Ltd. (Rs.)	Combined Entity (Rs.)
Profit after Tax	86,50,000	49,72,000	1,21,85,000

Residual Net Cash Flows per year	90,10,000	54,87,000	1,85,00,000
Required return on equity	13.75%	13.05%	12.50%

You are required to compute the following :

- Minimum price per share S Ltd. should accept from R Ltd.
- Maximum price per share R Ltd. shall be willing to offer to S Ltd.
- Floor value of per share S Ltd., whether it shall play any role in decision for its acquisition by R Ltd.

Solution :

- Minimum price per share as acceptable to S Ltd.

It would be higher of market value or book value

(A) Market value = $80,00,000 \times 3.2 = \text{Rs.}2,56,00,000$

(B) Book value (Net Asset Value)

= Capital + Reserves

= $1,20,00,000 + 2,79,95,000$

= $3,99,95,000$

i.e. $\frac{3,99,95,000}{80,00,000} = \text{Rs.}4.999375$ per share

i.e. $\text{Rs.}4.999375$ per share

- Maximum price per share payable by R Ltd.

It would be the advantage that R Ltd. get from merger.

Pre combination value of R Ltd.

= $\frac{90,10,000}{0.1375} = \text{Rs.}6,55,27,273$

Post combination value of R Ltd. (Combined)

= $\frac{1,85,00,000}{0.125} = \text{Rs.}14,80,00,000$

Diff. = $14,80,00,000 - 6,55,27,273 = 8,24,72,727$

i.e. $\frac{8,24,72,727}{80,00,000} = \text{Rs.}10.31$ per share

- The floor price of S Ltd. is $\text{Rs.}3.2$ per share i.e. the current market value. It is not used in decision to buy the entity as it below its Net Asset Value.

Question 62

May 2019 (New) - Paper

Given is the following information :

	Day Ltd.	Night Ltd.
Net Earnings	Rs.5 crores	Rs.3.50 crores
No. of Equity Shares	10,00,000	7,00,000

The shares of Day Ltd. and Night Ltd. trade at 20 and 15 times their respective P/E ratios.

Day Ltd. considers taking over Night Ltd. by paying $\text{Rs.}55$ crores considering that the market price of Night Ltd. reflects its true value. It is considering both the following options :

- Takeover is funded entirely in cash.

(ii) Takeover is funded entirely in stock.

You are required to calculate the cost of the takeover and advise Day Ltd. on the best alternative.

Solution :

	Day Ltd.	Night Ltd.
(A) Earnings	5 Cr.	3.5 Cr.
(B) No. of Shares	10 lakh	7 lakh
(C) EPS (A/B)	Rs.50/sh.	Rs.50/sh.
(D) P/E	20	15
(E) MPS (C×D)	Rs.1000/sh.	Rs.750/sh.

1) If t_{10} by funded by cash

(A) Cost of takeover

Amt. Paid = 55 Cr.

Cost of Night = $\frac{52.5 \text{ Cr}}{2.5 \text{ Cr}} (750 \times 7)$

(B) Total Earnings

Day 5 Cr

Night 3.5 Cr 8.5 Cr

Total No. 10 lakh (No New Shares shall be issued)

EPS = $\frac{8.5 \text{ Cr}}{10 \text{ lakh}} = \text{Rs.}85/\text{Sh.}$

MPS = EPS × P.E.
= $85 \times 20 = \text{Rs.}1,700$

If Night is purchased in all cash deal the MPS of Day increases from 1000 to 1700 i.e. gain of 700/sh. i.e. 70%

2) If t_{10} is funded by stock

(A) Cost of takeover = 2.5 Cr

(B) Total earning = 8.5 Cr

Total no.

Day 10 lakh

Night = $\frac{55 \text{ Cr.}}{1000} = 5.5 \text{ lakh}$ 15.5 lakh

EPS = $\frac{8.5 \text{ Cr.}}{15.5 \text{ lakh}} = \text{Rs.}54.8387$

MPS = EPS × P.E.
= $54.8387 \times 20 = \text{Rs.}1096.774$

If Night is purchased in all stock deal the MPS of Day increases from 1000 to 1096.774 i.e. gain of 96.774 i.e. 9.6774%

Note : If Day Ltd. has existing cash then it should purchase Night by all cash deal.

