Q. 20. X Ltd. is considering the proposal to acquire Y Ltd. and their financial information is given below :

Particulars	X Ltd.	Y Ltd.
No. of Equity shares	10,00,000	6,00,000
Market price per share (Rs.)	30	18
Market Capitalization (Rs.)	3,00,00,000	1,08,00,000

X Ltd. intend to pay Rs. 1,40,00,000 in cash for Y Ltd., if Y Ltd.'s market price reflects only its value as a separate entity. Calculate the cost of merger: (i) When merger is financed by cash (ii) When merger is financed by stock.

Answer 20.

(i) **Cost of Merger, when Merger is Financed by Cash = (Cash - MVY) + (MVY - PVY)**

Where,

MVY = Market value of Y Ltd.

PVY = True/intrinsic value of Y Ltd.

Then, = (1,40,00,000 – 1,08,00,000) + (1,08,00,000 – 1,08,00,000) = Rs. 32,00,000

If cost of merger becomes negative then shareholders of X Ltd. will get benefited by acquiring Y Ltd. in terms of market value.

(ii) **Cost of Merger when Merger is Financed by Exchange of Shares in X Ltd. to the shareholders of Y Ltd.**

Cost of merger = PVXY - PVY

Where,

PVXY = Value in X Ltd. that Y Ltd.'s shareholders get.

Suppose X Ltd. agrees to exchange 5,00,000 shares in exchange of shares in Y Ltd., instead of payment in cash of Rs. 1,40,00,000. Then the cost of merger is calculated as below :

= (5,00,000 × Rs. 30) – Rs. 1,08,00,000 = Rs. 42,00,000

PVXY = PVX + PVY = 3,00,00,000 + 1,08,00,000 = Rs. 4,08,00,000

Proportion that Y Ltd.'s shareholders get in X Ltd.'s Capital structure will be :

$$= \frac{5,00,000}{10,00,000 + 5,00,000} = 0.333$$

True Cost of Merger = PVXY - PVY

= (0.333 × 4,08,00,000) - 1,08,00,000 = Rs. 28,00,000

The cost of merger i.e., Rs. 42,00,000 as calculated above is much higher than the true cost of merger Rs. 28,00,000. With this proposal, the shareholders of Y Ltd. will get benefited.

Note :

(1) When the cost of merger is calculated on the cash consideration and when cost of merger is unaffected by the merger gains.

(2) But when merger is based on the exchange of shares then the cost of merger depends on the gains which has to be shared with the shareholder of Y Ltd.

Q. 21. A Ltd. is considering takeover of B Ltd. and C Ltd. The financial data for the three companies are as follows :

Particulars	A Ltd.	B Ltd.	C Ltd.
Equity Share Capital of Rs. 10 each (Rs. crores)	**450**	**180**	**90**
Earnings (Rs. crores)	**90**	**18**	**18**
Market price of each share (Rs.)	**60**	**37**	**46**

Calculate :

(i) **Price earnings ratios**

(ii) **Earnings per share of A Ltd. after the acquisition of B Ltd. and C Ltd. separately. Will you recommend the merger of either/both of the companies? Justify your answer.**

Answer 21.

Calculation of Price Earnings ratios

Particulars	A Ltd.	B Ltd.	C Ltd.
Earnings (Rs. crores)	90	18	18
No. of shares (crores)	45	18	9
EPS (Rs.)	2	1	2
Market price per share (Rs.)	60	37	46
PE Ratio	40	37	23

Calculation of EPS of A Ltd. after acquisition of B Ltd. and C Ltd.

Exchange ratio or rate $= \frac{\text{Buyer's P/E Ratio}}{\text{Seller's P/E Ratio}}$

Particulars	A Ltd.	B Ltd.	C Ltd.
Exchange ratio in A Ltd.	–	81	1.30
Value of shares (Rs. crores)	2700	666	414
No. of A Ltd.'s share to be given (crores)	–	666/60	414/60
EPS (Rs.)	–	11.11	6.9
Total earings after acquisition (Rs. crores)	–	108	108
Total number of shares (crores)	–	56.1	51.9
EPS after acquisition (Rs.)	–	1.93	2.08

Analysis: After merger of C Ltd. with A Ltd's. EPS is higher than A Ltd. (Rs. 2.08). Hence merger with only C Ltd. is suggested to increase the value to the shareholders of A Ltd.

Q. 22. XYZ Ltd. is considering merger with ABC Ltd. XYZ Ltd.'s shares are currently traded at Rs. 25. It has 2,00,000 shares outstanding and its profits after taxes (PAT) amount to Rs. Rs. 4,00,000. ABC Ltd. has 1,00,000 shares outstanding. Its current market price is Rs. 12.50 and its PAT are Rs. 1,00,000. 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:

(i) What is the pre-merger earnings per share (EPS) and P/E ratios of both the companies?

(ii) If ABC Ltd.'s P/E ratio is 8, what is its current market price? What is the exchange ratio? What will XYZ Ltd.'s post-merger EPS be?

(iii) What must the exchange ratio be for XYZ Ltd.'s that pre and post-merger EPS to be the same?

Answer 22.

(i) Pre-merger EPS and P/E ratios of XYZ Ltd. and ABC Ltd.

Particulars	**XYZ Ltd.**	**ABC Ltd.**
Profits after taxes	4,00,000	1,00,000
Number of shares outstanding	2,00,000	1,00,000
EPS (Earnings after tax/No. of shares)	2	1
Market price per share	23.00	12.50
P/E Ratio (times)	12.50	12.50

(ii) **Current market price of ABC Ltd., if P/E ratio is 8** = Rs. 1 × 8 = Rs. 8

Exchange ratio = Rs. 25/8 = 3.125

Post merger EPS of XYZ Ltd. $= \frac{\text{Rs. } 4,00,000 + \text{Rs. } 1,00,000}{2,00,000 + (1,00,000 / 3.125)} = \frac{\text{Rs. } 5,00,000}{2,32,000} = 216$

(iii) **Desired exchange ratio**

Total number of shares in post-merged company

$= \frac{\text{Post - merged earnings}}{\text{Pre - merger EPS of XYZ Ltd.}}$ = 5,00,000/2 = 2,50,000

Number of shares required to be issued = 2,50,000 – 200,000 = 50,000

Therefore, the exchange ratio is = 50,000/ 1,00,000 = 0.50

Q. 23. Company X is contemplating the purchase of Company Y, Company X has 3,00,000 shares having a market price of Rs. 30 per share, while Company Y has 2,00,000 shares selling at Rs. 20 per share. The EPS are Rs. 4.00 and Rs. 2.25 for Company X and Y respectively. Managements of both companies are discussing two alternative proposals for exchange of shares as indicated below :

(i) in proportion to the relative earnings per share of two Companies.

(ii) .5 share of Company X for one share of company Y (5 : 1).

You are required :

(i) to calculate the Earnings Per Share (EPS) after merger under two alternatives; and

(ii) to show the impact on EPS for the shareholders of two companies under both alternatives.

Answer 23.

Working Notes :

Computation of total earnings after merger

Particulars	Company X	Company Y	Total
Outstanding shares	3,00,000	2,00,000	
EPS (Rs.)	4	2.25	
Total earnings (Rs.)	12,00,000	4,50,000	16,50.000

***(i)(a)* Calculation of EPS when exchange ratio is in proportion to relative EPS of two companies**

(Marks)

Company X		3,00,000
Company Y	2,00,000 × 2.25/4	1,12,500
Total number of shares after merger		4,12,500

Company X

EPS before merger = Rs. 4

EPS after merger = Rs 16,50,000/4,12,500 shares = Rs. 4

Company Y

EPS before merger = Rs 2.25

EPS after merger

= EPS before merger / Share Exchange ratio on EPS basis

$$= \frac{2.25}{2.25/4} = \frac{2.25}{0.565} = \text{Rs. } 4$$

(i) (b) **Calculate of EPS when share exchange ratio is 0.5:1**

Total earnings after merger = Rs. 16,50,000

Total number of shares after merger = 3,00,000 + (2,00,000 × 0.5) = 4,00,000 shares

EPS after merger = Rs. 16,50,000 / 4,00,000 = Rs. 4.125

***(ii)* Impact of merger on EPS for shareholders of Company X and Company Y**

(a) **Impact on Shareholders of Company X** **(Rs.)**

EPS before merger	4.000
EPS after merger	4.125
Increase in EPS	0.125

***(b)* Impact on shareholders of Company Y** **(Rs.)**

Equivalent EPS before merger (2.25/0.5)	4.500
EPS after merger	4.125
Decrease in EPS	0.375

Q. 24. ABC Ltd. is run and managed by an efficient team that insists on reinvesting 60% of its earnings in projects that provide an ROE (Return of Equity) of 10% despite the fact that the firm's capitalization rate (K) is 15%. The firm's currently year's earnings is Rs. 10 per share.

At what price will the stock of ABC Ltd. sell? What is the present value of growth opportunities? Why would such a firm be a takeover target?

Answer 24.

Dividend growth rate (G)

G = ROE × b

Where,

b = 1 - Pay out ratio

G = 10% × 0.60 = 6%

Stock price of ABC Ltd.

$$= \frac{10 \times 0.4}{0.15 \times 0.06} = \frac{4}{0.009} = \text{Rs. } 44.44$$

Present Value of Growth Opportunities (PVGO)

= Market price per share - No growth value per share

= Rs. 44.44 - (Rs. 10/0.15)

= Rs. 44.44 - Rs. 66.66 = Rs. 22.22 (negative PVGO)

Reasons for takeover target

Negative PVGO implies that the net present value of the firm's projects is negative: the rate of return on this asset is less than the opportunity cost of capital. Such a firm would be subject to takeover target because another firm could buy the firm for the market price of Rs. 44.44 per share and increase the value of the firm by changing its investment policy. For example, if the new management simply paid out all earning as dividend, the value of the firm would increase up to its no growth value of Rs. 66.66.

Q. 25. Following are the financial statement for A Ltd. for the current financial year. Both the firm operate in the same industry :

Balance Sheet **(Rs.)**

Particulars	A Ltd.	B. Ltd.
Total Current assets	14,00,000	10,00,000
Total Fixed assets (net)	10,00,000	5,00,000
	24,00,000	15,00,000
Equity capital (of Rs. 10 each)	10,00,000	8,00,000
Retained earnings	2,00,000	
14% Long-term debt	5,00,000	3,00,000
Total Current liabilities	7,00,000	4,00,000
	24,00,000	15,00,000

Income-Statements **(Rs.)**

Particulars	A Ltd.	B. Ltd.
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		
Number of equity shares	10,000	8,000
Dividend payment ratio (D/P)	40%	60%
Market price per share (MPS)	Rs. 400	Rs. 150

Assume that the two firms 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 –

(i) Decompose the share prices of both the companies into EPS and P/E components, and also segregate their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.

(ii) Estimate future EPS growth rates for each firm.

(iii) Based on expected operating synergies, A Ltd. estimates that the intrinsic value of B's equity share would be Rs. 200 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by A Ltd. to B Ltd. 's shareholders. Based on your analysis in parts (i) and (ii) would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? Why?

(iv) Calculate the post-merger EPS based on an exchange ratio of 0.4:1 being offered by A Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.

(v) Based on a 0.4:1 exchange ratio,and assuming that A's pre-merger P/E ratio will continue after the merger, estimate the post-merger market price. Show the resulting accretion or dilution in pre-merger market prices.

Worker price per share (MPS) = EPS × P/E ratio or P/E Ratio = MPS / EPS.

Answer 25.

(i) Determination of EPS, P/E ratio, ROE and BVPC of A Ltd. and B Ltd.

		A Ltd.	B Ltd.
Profits After Tax	(PAT)	Rs. 2,10,000	99,000
No. of Shares		10,000	8,000
EPS	(PAT/N)	Rs. 21.00	Rs. 12.375
Market price share	(MPS)	Rs. 400	Rs. 150
P/E ratio		19.05	12.12
(MPS/EPS)		12,00,000	8,00,000
Equity funds	(EF)	Rs. 120	Rs. 100
BVPC	(EF/N)	17.5%	12.37%
ROE			
(PAT/EF) × 100			

(ii) Estimates of Growth rates in EPS for each Firm

Retention ratio	(1-D/P ratio)	0.6
0.4		
Growth rate	(ROE × Retention ratio)	10.5%
4.95%		

(iii) Justifiable equity share exchange ratio

(a) Market price based $= \frac{\text{MPSB}}{\text{MPSA}} = \frac{\text{Rs. 15}}{\text{Rs. 40}} = 0.375 : 1$ (lower limit)

(b) Intrinsic value based $= \frac{\text{Rs. 20}}{\text{Rs. 40}} = 0.5 : 1$ (upper limit)

Since A Ltd. has a higher EPS, ROE, P/E ratio, and even higher EPS growth expectations, the negotiated terms would be expected to be closer to the lower limit, based on the existing share prices.

(iv) Calculation of Post-merger EPS and other effects

Particulars		**A Ltd.**	**B Ltd.**	**Combined**
PAT	(Rs.)	2,10,000	99,000	3,09,000
(i)		10,000	8,000	13,200*
Shares outstanding		21.00	12.375	23.41
(ii)		2.41	3.015	—
EPS	(Rs.)			
(i)/(ii)				
EPS Accretion (Dilution)	(Rs.)			

(v) Estimate of Post-merger Market Price and other effects

Particulars		**A Ltd.**	**B Ltd.**	**Combined**
EPS	(Rs.)	Rs. 21.00	Rs. 12.375	23.41
(i)		19.05	12.12	19.05
P/E Ratio		400	150	446.00
MPS	(Rs.)	46	28.40***	
(ii)				
MPS Accretion (Dilution)	(Rs.)			
(i) × (ii)				

* Shares outstanding (combined) Shares	= 10,000 shares + (0.40 × 8,000)	= 13,200
** EPS claim per old share	= Rs. 23.41 × 0.40	= Rs. 9.36
EPS dilution	= Rs. 12.375 – Re. 9.36	= Rs. 3.015

		Rs.
MPS claim per old share	(Rs. 446 × 0.4)	178.40
Less : MPS per old share		150.00
		28.40

Q. 26. The following information is provided related to the acquiring firm Mark Limited and the target firm Mask Limited :

	Mark Limited	*Mask Limited*
Profits after tax (PAT)	**Rs. 2,000 lakhs**	**Rs. 400 lakhs**
Number of shares	**200 lakhs**	**100 lakhs**
Outstanding	**10**	**5**
P/E ratio (times)		

***Required* :**

(i) **What is the swap ratio based on current market price?**

(ii) **What is the EPS of Mark Limited after acquisition?**

(iii) **What is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged?**

(iv) **Determine the market value of the merged firm.**

(v) **Calculate gain/loss for shareholders of the two independent companies after acquisition.**

Answer 26.

EPS before acquisition

Mark Ltd. = Rs. 2,000 lakhs/200 lakhs = Rs.10

Mark Ltd. = Rs. 400 lakhs/100 lakhs = Rs. 4

Market price of share before an acquisition = EPS × P.E. ratio

Mark Ltd. = Rs. 10 × 10 = Rs. 100

Mask Ltd. = Rs. 4 × 5 = Rs. 20

(i) Swap Ratio based on Current Market Prices

= Rs. 20/Rs. 100 = 0.2 *i.e.* 1 share of Mark Ltd. for 5 shares of Mask Ltd.

Number of shares to be issued = 100 lakhs × 0.20 = 20 lakhs

(ii) EPS after Acquisition $= \frac{\text{Rs. 2,000 Lakhs} + \text{Rs. 400 Lakhs}}{\text{200 lakhs} + \text{20 lakhs}} = \text{Rs. 10.91}$

(iii) Expected market price per share of Mark Ltd. after an acquisition after assuming P/E ratio of Mark Ltd. remains unchanged = Rs. 10.91 × 10 = Rs. 109.10

(iv) Market Value of Merged Firm = Rs. 109.10 × 220 lakh shares = Rs. 240.02 crores

(v) Gain from the Merger

(*Rs. Crores*)

Post-merger market value of merged firm	240.02
Less : Pre-merger market value	
Mark Ltd. 200 lakhs × Rs. 100 = 200 crores	
Mask Ltd. 100 lakhs × Rs. 20 = 20 crores	220.00
Gain from merger	20.02

Gain to shareholders of Mark Ltd. and Mask Ltd. (*Rs. Crores*)

Particulars	**Mark Ltd.**	**Mask Ltd.**
Post-merger value	218.20	21.82
Less: Pre-merger value	200.00	20.00
Gain to shareholders	18.20	1.82

Q. 27. Illustrate two main methods of financing an acquisition refuned to in Accounting Standard - 14(AS-14)

Answer 27.

Accounting for Amalgamations

The provisions of Accounting Standard (AS-14) on Accounting for Amalgamations issued by the Institute of Chartered accountants of India need to be referred to in this context.

The two main methods of financing an acquisition are cash and share exchange:

Cash : This method is generally considered suitable for relatively small acquisitions. It has two advantages: (i) the buyer retains total control as the shareholders in the selling company are completely bought out, and (ii) the value of the bid is known and the process is simple.

Let us consider 2 Companies A & B whose figures are stated below :

	Company A	**Company B**
Market price per share	Rs. 75/-	Rs. 15/-
No. of shares	100,000	60,000
Market Value of the company	75,00,000	900,000

Assume Company A intends to pay Rs.12,00,000/- cash for Company B.

If the share price does not anticipate a merger:

The share price in the market is expected to accurately reflect the true value of the company.

The cost to the bidder Company A = Payment - The market value of Company B

= Rs.12 lakhs – Rs.9 lakhs

= Rs.3 lakhs.

Company A is paying Rs.3 lakhs for the identified benefits of the merger.

If the share price includes a speculation element of Rs.2/- per share:

The cost to Company A = Rs.3,00,000 + (60,000 x Rs.2)

= Rs. 3,00,000 + Rs. 1,20,000

= Rs. 4,20,000/-

Worth of Company B = (Rs. 15 – Rs. 2) × 60,000

= Rs. 13 × 60,000

= Rs. 7,80,000/-

This can also be expressed as: Rs. 12,00,000 – Rs. 4,20,000 = Rs. 7,80,000/-

Share exchange : The method of payment in large transactions is predominantly stock for stock.

The advantage of this method is that the acquirer does not part with cash and does not increase the financial risk by raising new debt. The disadvantage is that the acquirer's shareholders will have to share future prosperity with those of the acquired company.

Suppose Company A wished to offer shares in Company A to the shareholders of Company B instead of cash :

Amount to be paid to shareholders of Company B = Rs. 12,00,000

Market price of shares of Company A = Rs. 75/-

No. of shares to be offered = Rs. 12,00,000 / Rs. 75 = 16,000

Now, shareholders of Company B will own part of Company A, and will benefit from any future gains of the merged enterprise.

Their share in the merged enterprise = 16,000 / (1,00,000 + 16,000) = 13.8%

Further, now suppose that the benefits of the merger has been identified by Company A to have a present value of Rs. 4,00,000/-,

The value of the merged entity = Rs. 75,00,000 + (Rs. 9,00,000 + Rs. 4,00,000) = Rs. 88,00,000/-

True cost of merger to the shareholders of Company A:

	Company A	Company B
Proportion of ownership in merged enterprise	86.2%	13.8%
Market Value: Total = Rs. 88,00,000	75,85,600	12,14,400
No. of shares currently in issue	100,000	60,000
Market price per share	Rs. 75.86	Rs. 20.24

The above gives the value of shares in the company *before* the merger is completed, based on estimates of what the company will be worth *after* the merger.

The valuation of each company also recognizes the split of the expected benefits which will accrue to the combined entity once the merger has taken place.

The true cost can be calculated as given below :

60,000 shares in Company B @ Rs. 20.24	Rs. 12,14,400
Less : Current market value	Rs. 9,00,000
Benefits being paid to shareholders of Company B	Rs. 3,14,400

Q. 28. A Ltd. is intending to acquire X Ltd. by merger and the following information is available in respect of the companies :

	A Ltd.	X Ltd.
Number of equity shares	**10,00,000**	**6,00,000**
Earnings after tax (Rs.)	**50,00,000**	**18,00,000**
Market value per share (Rs.)	**42**	**28**

***Require* :**

(i) What is the present EPS of both the companies?

(ii) If the proposed merger takes place, what would be the new earning per share of A Ltd. ? Assume that the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price.

(iii) What should be the exchange ratio, if X Ltd. wants to ensure the earnings to members are as before the merger takes place?

Answer 28.

(i) Earnings per share $= \frac{\text{EAT}}{\text{No. of equity share}}$

A Ltd. $= \frac{50,00,000}{10,00,000} = \text{Rs. } 5$

B Ltd. $= \frac{18,00,000}{6,00,000} = \text{Rs. } 3$

(ii) No. of shares X Ltd's shareholders will get in A Ltd. based on market value per share $= \frac{28}{42} \times 6,00,000 =$ 4,00,000 shares.

Total number of equity shares of A Ltd. after merger

= 10,00,000 + 4,00,000 = 14,00,000 shares.

Total EAT = Rs. (50,00,000 + 18,00,000) = Rs. 68,00,000

EPS after merger $= \frac{68,00,000}{14,00,000} =$ Rs. 4.86

(iii) Calculation of exchange ratio to ensure shareholders of X Ltd. to earn the same as was before merger :

Shares to be exchanged based on EPS $= \frac{\text{Rs. } 3}{\text{Rs. } 5} \times 6,00,000 =$ 3,60,000 shares

EPS after merger $= \frac{\text{Rs. } (50,00,000 + 18,00,000)}{13,60,000} = \text{Rs. } 5$

Total earnings in A Ltd. available to shareholders of X Ltd.

= 3,60,000 × 5 = Rs. 18,00,000

Exchange ratio based on market price is beneficial to shareholders of X Ltd. because of higher Earnings available to them i.e.,

4,00,000 shares × 4.86 = Rs. 19,44,000

Q. 29. X Ltd. is considering merger with A Ltd. X Ltd's shares are currently trade at Rs. 20. It has 2,50,000 shares outstanding and its earnings after taxes (EAT) amount Rs. 5,00,000. A 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). A ltd. has argued to plan under which X Ltd. will offer the current market value of A Ltd's shares :

(i) What is the pre merger EPS and P/E ratio of both the companies.

(ii) If ABC Ltd's P/E ratio is 6.4, what is the current market price? What is the exchange ratio? What will X Ltd's post merger EPS be?

(iii) What should be the exchange ratio, if X Ltd's pre merger and post merger EPS are to be the same?

Answer 29.

(i) Pre merger EPS and P/E ratio of X Ltd and A Ltd.

Particulars	**X Ltd.**	**A Ltd.**
(a) Earning after taxes	5,00,000	1,25,000
(b) Number of shares outstanding	2,50,000	1,25,000
(c) EPS (a ÷ b)	2	1
(d) Market price per share	20	10
(e) P/E ratio (times (d ÷ c)	10	10

(ii) Current market price of A Ltd. if P/E ratio is 6.4 = 1 × 6.4 = Rs. 6.40

Exchange ratio $= \frac{\text{Rs. } 20}{6.40} = 3.125$

Post merger EPS of X Ltd.

No. of shares after merger = 2,50,000 $+ \left(\frac{1,25,000 \times 6.9}{20} \right) =$ 2,90,000 shares

\ Post merger EPS $= \frac{6,25,000}{2,90,000}$ = Rs. 2.16

(iii) **Desired exchange ratio**

Total number of shares in post merger company $= \frac{6,25,000}{2}$ = 3,12,500

Number of shares required to be issued = 3,12,500 – 2,50,000 = 62,500

Therefore, the exchange ratio is 62,500 : 1,25,000 $= \frac{62,500}{1,25,000} = 0.50$.

Q. 30. M. Co. Ltd. is studying the possible acquisition of N Company Ltd, by way of merger. The following data are available in respect of the companies.

	M Co. Ltd.	N Co. Ltd.
EAT (Rs.)	**80,00,000**	**24,00,000**
No. of equity shares	**16,00,000**	**4,00,000**
Market value per share (Rs.)	**20**	**160**

(i) If the merger goes through by exchange of equity and the exchange ratio is based on the current market price, what is the new earning per share for M Co. Ltd.?

(ii) N Co. Ltd wants to be sure that the earnings equitable to its shareholders will not be diminished by the merger. What should be the exchange ratio in that case?

Answer 30.

(i) **Calculation of new EPS of M Co. Ltd.**

No. of equity shares to be issued by M Co. to N Co. Ltd.

$= 4,00,000 \times \frac{160}{200}$ = 3,20,000 shares

\ Total number of shares = 16,00,000 + 3,20,000 = 19,20,000 shares

Total EAT (after acquisition) = Rs. (80,00,000 + 24,00,000)

= Rs. 1,04,00,000

\ EPS $= \frac{\text{Rs. } 1,04,000}{19,20,000 \text{ shares}}$ = Rs. 5.42

(ii) **Calculations of exchange ratio which would not diminish the EPS of N Co. Ltd. after its merger with M Co. Ltd.**

Current EPS of M Co. Ltd. $= \frac{\text{Rs. } 80,00,000}{16,00,000 \text{ shares}}$ = Rs. 5

N Co. Ltd. $= \frac{\text{Rs. } 24,00,000}{4,00,000 \text{ shares}}$ = Rs. 6

\ Exchange ratio $= \frac{6}{5}$ = 1.20

No. of shares to be issued by M Co. Ltd. to N Co. Ltd.

$= 4,00,000 \times \frac{6}{5}$ = 4,80,000 shares

Total number of shares of M Co. Ltd. after acquisition

= 16,00,000 + 4,80,000 = 20,80,000 shares

EPS (after merger) $= \frac{\text{Rs. } 1,04,00,000}{20,80,000 \text{ shares}}$ = Rs. 5

Total earnings in M Co. Ltd. available to new shareholders of N Co. Ltd. = 4,80,000 × Rs. 5 = Rs. 24,00,000

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

Q. 31. The board of Directors of X Ltd. are considering the possible acquisition (by way of merger) of firm Y. The following data are available in respect of both the companies.

Company	*EAT (Rs.)*	*No. of Eq. sh.*	*Market value per share (Rs.)*
X	**4,00,000**	**80,000**	**15**
Y	**1,20,000**	**20,000**	**12**

(a) What shall be the earning per share for company X, if the proposed merger takes place by exchange of equity share and the exchange ratio is based on the current market price?

(b) Company Y wants to be sure that earnings available to its shareholders will not be diminished by the Merger, what should be the exchange ratio in that case?

Answer 31.

(a) No. of shares to be issued to Y Ltd. $= 20,000 \times \frac{12}{15}$ = 16,000 shares

Total number of share = 80,000 + 16,000 = 96,000 shares

Total earnings after tax = Rs. (4,00,000 + 1,20,000) = Rs. 5,20,000

\ EPS $= \frac{5,20,000}{96,000}$ = Rs. 5.42 per shares

(b) Present EPS of

X Ltd. $= \frac{4,00,000}{80,000}$ = Rs. 5

Y Ltd. $= \frac{1,20,000}{20,000}$ = Rs. 6

There exchange ratio should be 6 shares of X Ltd. for every 5 shares of Y Ltd.

\ Number of shares to be issued to Y Ltd. $= 20,000 \times \frac{6}{5}$ = 24,000 shares

Total number of shares of X Ltd. after merger

= 80,000 + 24,000 = 1,04,000 shares

EPS (after merger) $= \frac{5,20,000}{1,04,000}$ = Rs. 5

Total earnings available to shareholders of Y Ltd. after merger will be

24,000 × Rs. 5 = Rs. 1,20,000

Therefore, exchange ratio based on EPS is recommended.

Q. 32. The following information is provided related to the acquiring firm Mark Ltd. and the target firm Mask Ltd. :

Particulars	*Mark Ltd.*	*Mask Ltd.*
Profits after tax	**Rs. 2,000 lakhs**	**Rs. 400 lakhs**
Number of shares outstanding	**200 lakhs**	**100 lakhs**
P/E ratio (Times)	**10**	**5**

Required :

(i) What is the swap ratio based on current market price?

(ii) What is the EPS of Mark Ltd. after acquisition?

(iii) What is the expected market price per share of Mark Ltd. after acquisition, assuming P/E ratio of Mark Ltd. remains unchanged?

(iv) Determine the market value of the merged firm.

(v) Calculate gain/loss for shareholders of the two independent companies after acquisition.

Answer 32.

EPS before acquisition

Mark Ltd. = Rs. 200 lakhs / 200 lakh = Rs. 10

Mask Ltd. = Rs. 400 lakhs / 100 lakh = Rs. 4

Market price of shares before acquisition

Mark Ltd. = Rs. 10 × 10 = Rs. 100

Mask Ltd. = Rs. 4 × 5 = Rs. 20

(i) Swap ratio based on current market price

$$= \frac{\text{Rs. } 10}{\text{Rs. } 100} = 0.2 \text{ i.e., 1 share of Mark Ltd. for 5 shares of Mask Ltd.}$$

Number of shares to be issued = 100 lakhs × 0.20 lakh = 20 lakhs

(ii) EPS after acquisitions

$$= \frac{\text{Rs. } 2000 \text{ lakhs} + \text{Rs. } 400 \text{ lakhs}}{\text{Rs. } 200 \text{ lakhs} + 20 \text{ lakhs}} = \text{Rs. } 10.91$$

(iii) Expected market price per shares of Mark Ltd. after an acquisition assuming P/E ratio of Mark Ltd. remains unchanged.

= Rs. 10.91 × 10 = Rs. 109.10

(iv) Market value of merged firm

= Rs. 109.10 × 220 lakhs shares = Rs. 240.02 crores

(v) Gain from the Merger

Post merger market value of merged firm = Rs. 240.02 crores

Less : Pre merger market value

Mark Ltd. 200 lakhs × Rs. 100 = 200 crores

Mask Ltd. 100 lakhs × Rs. 20 = 20 crores = Rs. 220.00 crores

Gain from merger = Rs. 20.20 crores

Gain to shareholders of Mark Ltd. and Mask Ltd.

Particulars	Mark Ltd.	Mask Ltd.
Post merger value (109.1 × 200)	218.20	
(109.1 × 20)		21.82
Less : Pre merger value	200.00	20.00
Gain to shareholders	18.20	1.82

Q. 33. Given.

From the following information available to a market participant, determine the value of a European call option as per the BS formula.

Spot price of the share = Rs. 1120

Exercise price of the call option = Rs. 1100

Short-term risk free interest rate (continuously compounded) = 10 percent per annum.

Time remaining for expiration = 1 month

Volatility of the share/ standard deviation = 0.2

Compute the value of Call option by using B-S formulae.

Answer 33.

$C = SN(d_1) - Ke^{-rt} N(d_2)$

$$d_1 = \frac{\text{In}[\frac{S}{K}]+(r_f+\frac{\sigma^2}{2})T}{\sigma\sqrt{T}} = \frac{\text{In}(\frac{1120}{1100})+\{0.1+\frac{0.2^2}{2}\})0.8)}{0.2\sqrt{0.08}} = 0.5197$$

$$\therefore\ d_2 = 0.5197 - 0.2\sqrt{0.8} = 0.4631$$

$Ke^{-rt} = 1100e^{-0.008}$

$= (-)1100e^{-0.01}$

$= 1089.1$

$C = 1120N(0.5197) - 1089.1N(0.4631)$

$= 1120\,[N(0.51) + .97\{N(0.52) - N(0.51)\}] - 1089\,[N(0.46) + .31\,\{N(0.47) - N(0.46)\}]$

$= 1120\,[0.6950 + 0.97(0.6985 - 0.6950)] - 1089\,[0.6772 + 0.31(0.6808 - 0.6772)]$

$= 43.45$

Thus the value of call option is Rs. 43.4.

Consider the following data :

Stock price	= 50
Months to expiration	= 3 months
Risk-free rate of interest	= 10% p.a.
Standard deviation of stock	= 40%
Exercise price	= 55
Option type	= European call

Calculate value of call option as per Black-Scholes model

$C = SN(d_1) - Ke^{-rt} N(d_2)$

$$d_1 = \frac{\text{In}(\frac{S}{K}) + rT}{\sigma\sqrt{T}} + 0.5\sigma\sqrt{T}$$

$$d_2 = \frac{\text{In}(\frac{S}{K}) + rT}{\sigma\sqrt{T}} - 0.5\sigma\sqrt{T}$$

Here, $d_1 = \dfrac{\text{In}(\frac{50}{55}) + 0.25(0.10)}{0.4\sqrt{0.25}} + 0.5(0.40)\sqrt{0.25}$

$$d_2 = \frac{\ln(\frac{50}{55}) + 0.25(0.10)}{0.4\sqrt{0.25}} - 0.5(0.40)\sqrt{0.25}$$

$N(d_1) = 0.5 - 0.0987 = 0.4013$

$N(d_2) = 0.5 - 0.1736 = 0.3264$

$C = 50(0.4013) - 55^{-0.1\times0.25}(0.3264) = 2.56$

Q. 34. Given

Current market price of :	X	Y
Option	Rs. 16.12	Rs. 10.62
Stock	Rs. 80	Rs. 80
Exercise price	Rs. 70	Rs. 80
Time to expiration	3 months	3 months
Risk-free return	12% p.a.	12% p.a.
Expected dividend	0	0
Standard deviation of stock returns	60%	60%

Calculate the option value for X and Y.

Answer 34.

For call option *X*

$C = SN(d_1) - Ke\text{-}rt\ N(d_2)$

$$d_1 \frac{\ln(\frac{S}{K}) + rT}{\sigma\sqrt{T}} + 0.5\sigma\sqrt{T} = \frac{0.13353 + 0.075}{0.3} = 0.70$$

$\therefore N(d_1) = 0.7580$

$$d_2 = \frac{0.13353 - 0.075}{0.3} = 0.40$$

$\therefore N(d_2) = 0.6554$

Value of call option = $80(0.7580) - 70e^{0.12\times0.25}(0.6554) = 16.62$

For call option *Y*

$C = SN(d_1) - Ke^{-rt}\ N(d_2)$

$$d_1 \frac{\ln(\frac{S}{K}) + rT}{\sigma\sqrt{T}} + 0.5\sigma\sqrt{T} = \frac{0.0 + 0.075}{0.03} = 0.25$$

$\therefore N(d_1) = 0.5987$

Now, $d_2 = \frac{0.0 - 0.015}{0.3} = -0.05$

$\therefore N(d_2) = 0.48$

Value of call option = $80(0.5987) - 80e^{0.12\times0.25}(0.48) = 10.62$

Q. 35. Given.

The following information is available for the equity stock of Prakash Limited.

S = Rs. 120, K = Rs. 110, r = Rs. 0.12, s = 0.04

Calculate the price of a 6 month call option as per the Black-Scholes model.

Answer 35.

$C = SN(d_1) - Ke^{-rt} N(d_2)$

$$d_1 = \frac{\text{In}[\frac{S}{K}] + (r_f + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}} = \frac{\text{In}[\frac{120}{110}] + (0.12 + \frac{0.4^2}{2})0.5}{0.4\sqrt{0.5}} = \frac{0.0870 + 0.10}{0.2828} = 0.6612$$

$$d_2 = d_1 - \sigma\sqrt{T} = 0.6612 - 0.2828 = 0.3784$$

$N(d_1) = N(0.6612) = 0.7457$

$N(d_2) = N(0.3784) = 0.6474$

$$Ke^{-rt} = \frac{110}{e^{0.12\times0.5}} = 103.60$$

$C = 120 \times 0.7457 - 103.60 \times 0.6474 = 22.41$

Q. 36. What is the price of a European put option on a non-dividend-paying stock when the stock price is $69, the strike price is $70, the risk-free interest rate is 5% per annum, the volatility is 35% per annum, and the time to maturity is six month?

Compute the value of Put option by using B-S formula

Answer 36.

In this case S = 63, K = 70, r = 0.05, and T = 0.5

$$d_1 = \frac{\text{In}[\frac{S}{K}] + (r + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}} = \frac{\text{In}[\frac{69}{70}] + (0.05 + \frac{0.35^2}{2})0.5}{0.35\sqrt{0.5}} = 0.1666$$

$$d_2 = d_1 - \sigma\sqrt{T} = 0.1666 - 0.35\sqrt{0.5} = -0.0809$$

The price of European put is

$70\ e^{-0.05\times0.5}\ N(0.0809) - 69N(-0.1666) = 70 \times 0.5323\ e^{-0.05\times0.5} - 69 \times 0.4338 = 6.40$ or $ 6.40

Q. 37. Calculate the price of a three-month European put option on a non-dividend-paying stock with a strike price of $50 when the current stock price is $ 50, the risk-free interest rate is 10% per annum, and the volatility is 30% per annum.

Answer 37.

In this case S= 50, K= 50, r = 0.1, T= 0.25 and

$$d_1 = \frac{\text{In}[\frac{S}{K}] + (r + \frac{\sigma^2}{2})T}{\sigma\sqrt{T}} = \frac{\text{In}[\frac{50}{50}] + (0.1 + \frac{0.3^2}{2})0.25}{0.3\sqrt{0.25}} = 0.2417$$

$$d_2 = d_1 - \sigma\sqrt{T} = 0.2417 - 0.3\sqrt{0.25} = 0.0917$$

The European put price is

$50N(-0.0917)\ e^{-0.1\times0.25} - 50N(-0.2417) = 50 \times 0.4634\ e^{-0.1\times0.25} - 50 \times 0.4045 =$ $2.37.

Q. 38. Example of CDS Valuation.

Let's assume that CDS agreement has been entered into between A & B. A protection buyer and B is protection seller. Annual CDS spread (premium) is Rs. 60bps Premium is to be paid quarterly. Notional amount of the agreement is Rs. 100000

It is assumed that survival probability of the reference entity is given as

Month	0	3	6	9	12	15	18	21	24
Survival Probability	100	99.9	99.6	99.1	98.4	97.5	96.4	95.2	94

Recovery rate is given to 45%.

Answer 38.

Present value of fixed leg (Periodic payment made by A to B)

Month	Quarterly Premium	Survival Probability	Discounting Factor	Notional amount (,000)	PV of Fixed leg	Default probability	PV of Expected accrued payment
0	0	100	1	100000	0	0	
3	40	99.9	.99	100000	395	0.1	.198
6	40	99.6	.98	100000	390	0.3	.588
9	40	99.1	.97	100000	385	0.5	.097
12	40	98.4	.96	100000	378	0.7	1.344
15	40	97.5	.95	100000	371	0.9	1.71
18	40	96.4	.94	100000	362	1.1	2.068
21	40	95.2	.93	100000	354	1.2	2.232
24	40	94	.92	100000	346	1.2	2.208
				2982		11.318	

Present Value of Contingent Leg (Payment by B to A subject to non- survival of reference entity)

Month	Survival Probability	Default probability	Discounting Factor	Notional amount	Recovery	PV of Contingent leg
0	100	0	1	100000	55000	0
3	99.9	0.1	.99	100000	55000	54.45
6	99.6	0.3	.98	100000	55000	161.70
9	99.1	0.5	.97	100000	55000	266.75
12	98.4	0.7	.96	100000	55000	369.60
15	97.5	0.9	.95	100000	55000	470.25
18	96.4	1.1	.94	100000	55000	568.70
21	95.2	1.2	.93	100000	55000	613.80
24	94	1.2	.92	100000	55000	607.20
						3112.45

Value of CDS = PV of expected contingent leg-present value of fixed leg.

= Rs. 3112.45 – (Rs. 2982 + Rs. 11.32)

= Rs. 119.13

Rs. 119.13 is the positive CDS value to the protection buyer.

Q. 39. From the annual report 2010 of Precision Tools Limited, the following information has been collected :

Profit & Loss Account of Precision Tools Ltd. for the year ending on 31st March 2010.

	(Rs. In crores)
INCOME :	
Net sales	1,665.40
Other Income	265.50
Total income	1,930.90
EXPENDITURE :	
Generation, Administration & Other Expenses	121.80
Employees Remuneration & Benefits	628.10
	749.90
Profit Before Depreciation, Interest and Tax	1,181.00
Depreciation	238.70
Profit Before Interest and Tax	942.30
Interest & Finance charges	486.80
Profit Before Tax and Prior Period Adjustments	455.50
Prior period adjustments (Net)	8.40
Profit Before Tax	447.10
Provision for tax	3.70
Profit After Tax	443.40
P & L Balance brought forward	871.20
Total Profit Available for Appropriations Appropriations	1,314.60
Dividend :	
Proposed Final Dividend	(30.00)
Corporate-Dividend Tax	(3.10)
Appropriation from profit to reserves	(1,110.00)
Amount written back from bonds redemption reserve	242.20
Balance Carried to Balance Sheet	413.70

Assume that the company follows a 'Constant Payout Policy' and it is committed to maintain the same. Number of shares outstanding as on 31.03.2010 is 5 crores. Net worth of the company as on 31.03.2010 is Rs. 3,100.58 crores and its cost of equity is 15%. Find the value of the equity shares of Precision Tools Ltd. Use Constant Growth Model for Valuation.

Answer 39.

Valuation of Equity shares of Precision Tools Ltd. as at 31.03.2010 using the constant Growth Model for valuation.

Dividend per share = Rs. 30 crores/5 crores = Rs. 6.00

Return on Equity = 443.40/3100.58 = 14.30%

Dividend Payout Ratio = (30.00+3.10)/443.40 = 7.47%

Retention Ratio = 100% – 7.47% = 92.53%

Growth Rate = 14.30% × 92.59% = 13.23%

Value of Equity Share = (6 × 1.1323)/(15.00% – 13.23%) = Rs. 384.49

Assumption: The Company uses a "Constant Dividend Payout Policy"

Q. 40. The finance Director of Green Field Ltd. is investing a potential Rs. 250 lakh investment. The investment would be in a bio-tech project away from existing mainstream activities of computer hardware manufacture. Rs. 60 lakh of investment would be financed by internal funds, Rs. 90 lakh by long term loans and Rs.100 lakh by right issue. The investment is expected to generate pre-tax net cash flows of appropriately Rs. 50 lakh a year, for a period of 10 years. The residual value at the end of year 10 is forecast to be Rs. 50 lakh after tax. Government loan of Rs. 40 lakh out of total 90 lakh is also available. This will cost 2% below the company's normal cost of long term debt finance which is 8%.

Green Field Ltd's financial gearing is 60% equity and 40% debt by market value and its equity beta is 0.85. The average equity beta in computer hardware industry is 1.2, and average gearing 50% debt and 50% equity by market value.

The risk free rate is 5.5% per annum and the market return is 12% per annum. Issue costs are estimates to be 1% for debt financing (excluding subsidized loan) and 4% for equity financing.

The corporate tax is 30%.

(Issue costs are not tax deductible)

(a) Estimate the adjusted present value of the proposed investment.

Answer 40.

Assuming the risk of companies in the computer hardware industry is similar to that of Greenfield Ltd. the beta of computer hardware industry will be used as proxy to estimate the discount rate for the base case NPV.

Asset beta = Equity beta × E / {E+D(1-t)} = 1.2 × 50 / {50+50(1-0.30)} = 0.706

Using the capital asset pricing model:

Ke ungeared = 5.5 + (12-5.5) 0.706 = 10.09 = > 10%

Annual after tax cash flows = Rs 50 lakh × (1-0.3) = Rs. 35,00,000

From the annuity table with a 10% discount rate:

PV of annual cash flows, Rs. 35,00,000 × 6.145	=	2,15,07,500
PV of residual value, Rs. 50,00,000 × 0.386	=	19,30,000
		2,34,37,500
(Less) initial investment		(2,50,00,000)
Net Present Value		Rs. (15,62,500)

Subsidy :

The company saves 2% per year on Rs. 40,00,000 or Rs. 80,000.

The net of tax is Rs. 80,000 (1–0.3) = 56,000

Since it is a government subsidy, it is assumed to be risk-free. It would be discounted at 5.5% per year. Rs. 56,000 × 7.541 = Rs. 4,22,296.

Tax relief :

Interest payable per year: on Rs. 50,00,000 @ 8% and on Rs. 40,00,000 @ 6% = Rs. 6,40,000. Tax relief Thereon @ 30% = Rs. 1,92,000 p.a.

The PV of these reliefs (assumed to be tax-free) at the discount rate of 5.5% is Rs. 1,92,000 × 7.541 = Rs. 14,47,872.

Issue costs : Debts Rs. 50 lakh × 1% + Equity Rs. 100 lakh × 4%

= Rs. 4,50,000

The adjusted net present value is estimated to be :

Rs. 15,62,500 + Rs. 4,22,296 + 14,47,872 – 4,50,000 = Rs. 1,42,332.

Since it is negative, the project is not financially viable.

Q. 41. Dr. Udayan Saha has just completed her post qualification internship in a reputed medical hospital. He wants to buy the running practice of Dr. Bannerjee, a renowned child specialist located at Lansdowne in Kolkata. The revenue and the costs of this practice in 2007-2008 were as under:

	Rs.
Revenue	**10,00,000**
Employee expenses	**3,00,000**
Annual rent for the facilities	**1,00,000**
Rental of medical equipments	**80,000**
Medical insurance	**90,000**
The tax rate on the income	
Including local taxes and subscription	**35%**
The cost of capital for this practice	**10%**

The above revenue and all the associated expenses are estimated to grow at 4% p.a. for the next 10 years if Dr. Bannerjee continues to run the practice.

Dr. Udayan Saha anticipates that upon the changeover there will be drop in revenue by 25% in the first year of his practice. The growth rate in revenue and expenses will remain at 4% p.a. thereafter i.e. for year 2 onwards.

Dr. Udayan Saha wants your advice for the price she should offer to Dr. Bannerjee to purchase the latter's practice at Lansdowne, Kolkata.

Answer 41.

We make two evolution of the practice-

Run by Dr. Bannerjee as if he is continuing as before, and

Run by Dr. Udayan Saha assuming that he has bought the practice from Dr. Bannerjee.

(1) Cash flow in year 1 = (Revenue$_1$ – Operating expenses$_1$) (1 – Tax rate)

= [10,00,000 (1.04) – (3,00,000 + 1,00,000 + 80,000 + 90,000) (1.04)] × (1 – 0.35)

= [10,40,000 – 5,92,800] × 0.65 = Rs. 2,90,680

With the growth rate of 4% p.a. and using the cost of capital as the discount rate and assuming that the practice will have no terminal value after 10 years, the value of the practice:

$$\text{Value of practice} = CF_1\left[\frac{1-\frac{(1+g)^n}{(1+r)^n}}{(r-g)}\right] = \text{Rs. } 2{,}90{,}680\left[\frac{1-\frac{(1.04)^{10}}{(1.10)^{10}}}{0.10-0.04}\right]$$

= Rs. 2,90,680 (7.155029) = Rs. 20,79,824

(2) Similarly, cash flow in year 1 under Dr. Udayan Saha

= Rs. [7,50,000 (1.04) – 5,92,800] × 0.65 = Rs. 1,21,680

Value of practice for Dr. Udayan Saha for 10 years = Rs. 1,21,680 (7.155029) = Rs. 8,70,624

The difference of Rs. (20,79,824 – 8,70,624) or Rs. 12,09,200 is attributed as the value of Dr. Bannerjee – the key person.

Dr. Saha should offer Rs. 8,70,624 to Dr. Bannerjee for the practice. Should Dr. Bannerjee agree to stay

with the practice for a transition period after the transfer of the business, a higher price may be paid. Dr. Saha should ensure by the agreement of transfer of practice that Dr. Bannerjee cannot start a competing practice and extract business from Dr. Saha for the foreseeable future.

Q. 42. Consider the two firms that operate independently and have following characteristics:

	Ganga Ltd.	*Yamuna Ltd.*
Revenues	**6000**	**3000**
Cost of Goods Sold (COGS)	**3500**	**1800**
EBIT	**2500**	**1200**
Expected Growth rate	**5%**	**7%**
Cost of capital	**8%**	**9%**

Both firms are in steady state with capital spending offset by depreciation. Both firms have an effective tax rate of 40% and free financed only by equity. Consider the following two scenarios:

Scenario – 1: Assume that combing the firms will create economies of scale that will reduce the COGS to 50% of Revenues.

Scenario – 2: Assume that as a consequence of the merger the combined firm is expected to increase its future growth to 7% while COGS will be 60%.

It is given that Scenario 1 & 2 are mutually exclusive.

You are required to :

(a) Compute the values of both the firms as separate entities.

(b) Compute the value of both the firms together if there were absolutely no synergy at all from the merger.

(c) Compute the value of cost of capital ad the expected growth rate.

(d) Compute the value of synergy in Scenario 1 and Scenario 2.

Answer 42.

(a) Value of Ganga Ltd. = FCFF (1 + g) / (Ke - g) = EBIT (1 - t) (1 + 0.05) / (0.08 – 0.05)
= 2500 (1 – 0.4) (1+ 0.05) / 0.03
= Rs. 52,000L.

Value of Yamuna Ltd. = 1200 (1 – 0.4) (1 + 0.07) / (0.09 – 0.07) = Rs. 38,520L.

(b) Value of both firms without synergy = Rs. 52,500L + 38,520L = Rs. 91,020L.

(c) Cost of capital 8% × 52,500/91,020 + 9% × 38,520/91,020 = 8.42%

Expected growth = .05 × 52,500/91,020 + .07 × 38,520/91,020 = 5.84%

(d)

Calculating of Value of Synergy	**Scenario - I Rs.**	**Scenario - II Rs.**
Revenues	9,000	9,000
Cofst of Goods Sold	4,500 [@ 50%]	5,400 [@ 60%]
EBIT	4,500	3,600
PAT [Cost of capital: 8.42%, 8.42%		
Growth rate: 5.84%, 7.00%]	2,700	2,160
Value [2700(1.0584)/(.0842-.0584)]		
[2160(1.07)/(.0842-.07)]	110,763	162,760
Value of the firm without synergy	91,020	91,020
Value of synergy	19,743	71,740

Q. 43. 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**
Earning per share	**3.5**	**2.5**
Price-earning ratio	**10 times**	**14 times**
Market price per share	**Rs. 35**	**Rs. 35**

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

You are required to calculate –

(i) The EPS subsequent to merger,

(ii) Change in EPS for the shareholders of Rama Ltd. and Krishna Ltd.,

(iii) The market value of the post-merger firm,

(iv) The profits accruing to shareholders of both the Companies.

Answer 43.

Exchange ratio	1:1
New shares to be issued	2,00,000
Total shares of Rama Ltd. (4,00,000 + 2,00,000)	6,00,000
Total earnings	17,00,000
New EPS (17,00,000 / 6,00,000)	Rs. 2.83
Existing EPS of Rama Ltd.	Rs. 2.50
Increase in EPS (2.83 – 2.50) of Rama Ltd.	Rs. 0.33
Existing EPS of Krishna Ltd.	Rs. 3.50
Decrease in EPS (3.50 – 2.83) of Krishna Ltd.	Rs. 0.67
P/E ratio of new Co.	14 times
New Market Price (14 x 2.83)	Rs. 39.62
Total No. of shares	6,00,000
Total market capitalization (6,00,000 x 39.62)	2,37,72,000
Existing market capitalization (70,00,000 + 1,40,000)	2,10,00,000
Total Gain	27,72,000

	Total	Rama Ltd.	Krishna Ltd.
No. of share after merger	6,00,000	4,00,000	2,00,000
Market price	Rs. 39.62	Rs. 39.62	Rs. 39.62
Total Market value	Rs. 2,37,72,000	Rs. 1,58,48,000	Rs. 79,24,000
Existing market value	Rs. 2,10,00,000	Rs. 1,40,00,000	Rs. 70,00,000
Gain Share holders	Rs. 27,72,000	Rs. 18,48,000	Rs. 9,24,000

Q. 44. ABC Publishers Ltd. has been approached by other publishers Aajkal. Ltd. which is interested in buying the copy right of the book 'shareholders value creation'.

To estimate the value of the copy right, the following assumptions are made;

(i) The book is expected to generate Rs. 1,50,000 in after –tax cash flows each year for the next three years to ABC Publishers Ltd. and Rs. 1,00,000 a year for the subsequent two years. These are the cash flows after author royalties, promotional expenses and production costs.

(ii) About 40% of these cash flows are from large organisations that make bulk orders and considered predictable and stable. The cost of capital applied to these cash flows is 7%.

(iii) The remaining 60% of the cash flows are to the general public and this segment of the cash flows is considered much more volatile. The cost of capital applied to these cash flows is 10%.

Based on the information given above, estimate the value of the copyright.

Answer 44.

The value of the copyright can be estimated as follows:

Year	Stable cash flows Rs.	PV @ 7% Rs.	Volatile cash flows Rs.	PV @ 10% Rs.
1	60,000	56,075	90,000	81,818
2	60,000	52,406	90,000	74,380
3	60,000	48,978	90,000	67,619
4	40,000	30,516	60,000	40,981
5	40,000	28,519	60,000	37,255
		2,16,494		3,02,053

The value of the copyright is
Rs. 2,16,494 + Rs. 3,02,053 = Rs. 5,18,547.

Q. 45. The following financial share date pertaining to TECHNO LTD an IT company are made available to you :

Year ended March 31st	*2010*	*2009*	*2008*
EBIT (Rs.)	**696.03**	**325.65**	**155.86**
Non-branded Income (Rs.)	**53.43**	**35.23**	**3.46**
Inflation compound factor @ 8%	**1.000**	**1.087**	**1.181**
Remuneration of Capital	**5% of average capital employed**		
Average capital Employed (Rs.)	**1112.00**		
Corporate Tax Rate	**35%**		
Capitalization Factor	**16%**		

You are required to calculate the Brand Value for Techno Ltd.

Answer 45.

TECHNO LTD.

Computation of Brand Value (Amount in Rs. Crores)

Year ended March 31st		**2010**	**2009**	**2008**
EBIT	(Rs.)	696.03	325.65	155.86
Less : Non-brand income	(Rs.)	53.43	35.23	3.46
Adjusted Profits	(Rs.)	642.60	290.42	152.40
Inflation Compound Factor @ 8%		1.000	1.087	1.181
Present Value of Profits for the brand	(Rs.)	642.60	315.69	179.98
Weight age Factor		3	2	1
Weight age Profits	(Rs.)	1927.80	631.38	179.98
Profits	(Rs.)	456.53		
Remuneration of Capital (5% of Average capital employed)		55.60		
Brand Related		400.93		
Corporate tax @ 35%		140.33		
Brand Earning		260.60		
Capitalization Factor		16%		

Brand Value: (Return / Capitalization Rate)
260.60 / 0.16 = Rs. 1628.75 Crore.

Q. 46. Coca-colas Balance sheet for December 2008 is modified and summarized below:

	(Rs. mn)		**(Rs. mn)**
Cash and Near Cash	**1,648**	**Account Payable**	**3,141**
Marketable Securities	**159**	**Short-term Borrowing**	**4,462**
Accounts Receivable	**1,666**	**Other Short-term liabilities**	**1,037**
Other Current Assets	**2,017**	**Current Liabilities**	**8,640**
Current Assets	**5,490**	**Long-term Liabilities**	**687**
Long-term Investments	**1,863**	**Other Long-term Liabilities**	**1,415**
Depreciable Fixed Assets	**5,486**	**Non-current Liabilities**	**2,102**
Non-depreciable Fixed Assets	**199**	**Share Capital (paid-in)**	**3,060**
Accumulated Depreciation	**2,016**	**Retained Earnings**	**5,343**
Net Fixed Assets	**5,532**	**Shareholders' Equity**	**8,403**
Other Assets	**12,214**		
Total Assets	**38,290**	**Total Liabilities & Equity**	**38,290**

***Required* :**

Coca-Cola's most valuable asset is its brand name. Where in the balance sheet do you see its value?

Is there any way to adjust the balance sheet to reflect the value of this asset?

Answer 46.

Coca-cola's brand name value does not appear in its balance sheet. Of course, there is an item called non-depreciable fixed assets, but it is too small to represent the brand-name value; it's probably land.

One way to adjust the balance sheet to reflect the value of this asset (brand-name) is for Coca-cola to set up a separate subsidiary that would buy the rights to the brand name. The brand-name value would then show up as an asset for the subsidiary, which would then be reflected in Coca-cola's balance sheet as well, even if the financial statements were consolidated.

Q. 47. The following is the data regarding two Companies 'X' and 'Y' belonging to the same risk class.

	Company X	**Company Y**
No. of ordinary shares	**90,000**	**1,50,000**
Face value of share	**Rs. 10**	**Rs. 10**
Market price per share	**Rs. 1.20**	**Rs. 1.00**
6% Debentures	**Rs. 6,00,000**	
Profit before interest	**Rs. 18,000**	**Rs. 18,000**

All profits after debentures interest are distributed as dividends.

Examine how under Modigliani and Miller approach an investor holding 10 per cent of shares in company.

X will better off in switching his holdings to company Y.

Answer 47.

(1) Investors current position in firm X with 10% equity holdings:

(i) Investments (9000 shares × Rs. 1.20) Rs. 10,800

(ii) Dividend income 0.10 (18000-3600) Rs. 1,440

(2) Investor sells his holdings of firm X for Rs. 10,800 and creates a personal leverage by borrowing Rs. 6,000 (60,000 × 0.10). Thus, the total amount available with him is Rs. 16,800.

(3) He purchases 10% equity holdings of company Y for Rs. 15,000 (15,000 shares × Re. 1), his dividend income is Rs. 1,800 (Rs. 1,800 × 0.10)

(4)

Gross Income	Rs. 1,800
( ) Interest on personal borrowing (0.06 × 6000)	Rs. 360
	Rs. 1,440

He breaks even by investing in firm Y. But in the process he reduces his investment outlay by Rs. 1,800. Therefore, he is better off by investing in firm 'Y'

Alternatively :

By investing Rs. 16,800 he could augment his income to Rs. 1,656

Dividend income from firm Y = 18,000 (16,800/1,50,000) = Rs. 2.016

Less : Interest on personal borrowing (0.06 × 6,000) Rs. 360/

Net Income = Rs. 1,440

He breaks even by investing in firm Y. But in the process he reduces his investment outlay by Rs. 1,800. Therefore, he is better off by investing in firm 'Y'

Alternatively :

By investing Rs. 16,800 he could augment his income to Rs. 1,656

Dividend income from firm Y = 18,000 (16,800/1,50,000) = Rs. 2,016

Less : Interest on personal borrowing Rs. 360

Net Income = Rs. 1656

Decision : He is better off by investing in firm Y.

Q. 48. Estimate the brand value of the following information technology firm:

Year ended March 31st	**2001**	**2000**	**1999 (Rs. In crores)**
PBIT (Rs.)	**696.03**	**325.65**	**155.86**
Non-branded income (Rs.)	**53.43**	**35.23**	**3.46**
Inflation Compound factor @ 8%	**1.000**	**1.087**	**1.181**
Remuneration of Capital (5% of average capital employed)	**55.57**		
Tax @ 39.55%	**158.58**		
Multiple applied	**22.18**		

Answer 48.

The Computation of Brand value for the IT firm is as follows :

Year ended March 31st	**2001**	**2000**	**1999**
PBIT	696.03	325.65	155.86
Less: Non-brand income	53.43	35.23	3.46
Adjusted profits	642.60	290.42	152.40
Inflation compound factor @ 8%	1.00	1.087	1.181
Present value of profits for the brand	642.60	315.69	179.98
Weightage factor	3	2	1
Weightage profits	1927.80	631.38	179.98
Three years average weighted profits	456.53		
Remuneration of capital (5% of avg. capital employed)	55.57		
Brand related profits	400.96		
Tax at 39.55%	158.58		
Brand earnings	242.38		
Multiple applied	22.18		
Brand value	Rs. 5376.00 crore		

Note: The earnings would be reduced by 15% of the debt amount. Since the entire payment for shares is to be out of debt the net earnings of the merged Company after providing interest should yield an EPS of Rs. 4 per share.

Q. 49. S.K. Lab a pharmaceutical company in Western India was expected to have revenues of Rs. 50 lakhs in 2003 and report net income of Rs. 9 lakhs in that year.

The firm had a book value of assets of Rs. 110 lakhs and a book value of equity of Rs. 58 lakhs at the end of 2002. Its market value was Rs. 85 per share.

The firm was expected to maintain sales in its niche product, a multivitamin tablet and grow at 5% a year in the long term, primarily by expanding into the generic drug market. The beta of S.K. Lab traded in Mumbai Stock Exchange was 1.25

The return on 10 year GOI bond in India in 2002 was 7% and the risk premium for stocks over bond is assumed to be 3.5%

Do you consider the market price as the fair value of the shares of S.K. Lab?

Answer 49.

Expected net income = Rs. 9 lakhs.

Return on equity = 9/58 = 15.52%

Cost of equity = 7% + 1.25 (3.5%) = 11.375%

Price – book value ratio = (0.1552 – 0.005)/(0.11375 – 0.05) = 1.65

Estimated Market Value of equity = BV equity × price / BV ratio = 58 × 1.65 = Rs. 95.70 lakh

Hence the market price of shares of S.K. Lab is undervalued.

Q. 50. The financial data of G.D. Pharma is as follows :

	Rs.
Paid up capital (4 lakh shares)	**40 lakhs**
Reserve and surplus	**180 lakhs**
Profit after tax	**32 lakhs**

The P/E multiple of the shares of G.D. Pharma is 7. The company has taken up an expansion project at Gaziabad. The cost of the project is Rs. 200 lakhs. It proposes to fund it with a term loan of Rs. 100 lakhs from ICICI and balance by a rights issue. The rights will be priced at Rs. 25 per share including Rs. 15 as premium.

You are required to calculate :

(i) The value of the rights and the market capitalization of G.D. Pharma after the rights issue and

(ii) The Net Asset Value (NAV) of the shares after the rights issue.

Answer 50.

(i) Amount needed by rights issue = Rs. 200 – Rs. 100 = Rs. 100 lakhs

Subscription price/right share = Rs. 25

Number of rights share on offer = Rs. 100,00,000/25 = Rs. 4,00,000 shares

Hence ratio of right is 1 share for every share held.

Earnings per share = Rs. 32,00,000 / 4,00,000 = Rs. 8 per share

P/E multiple = 7

Market price = Rs. 8 × 7 = Rs. 56 per shares

Value of the rights $R = \frac{P_o - S}{N+1}$ [Where, P_o = cum-rights market price per share;

S = Subscription price of a right share; N = Number of existing shares required for a right issue]

$R = \frac{56-25}{1+1}$ = Rs. 15.50

Market value after the right issue : $\frac{NP_o + s}{N+1} = \frac{1 \times 56 + 25}{2}$ = Rs. 40.50

Number of shares outstanding after rights issue = 4 + 4 = 8 lakh shares

Market capitalization = Ex-rights price x Number of outstanding shares = Rs. 40.5 × 8 = Rs. 324 lakhs

(ii) Net asset value (NAV) per share after rights issue: (Rs. in lakh)

Paid-up Capital		80
Reserve and Surplus		
Existing	180	
Premium on right issue	60	240
Net worth of the Company		320

Number of share outstanding 8 lakh shares

NAV per share = Rs. 320 lakh / 8 lakh = Rs. 40 per share.

Q. 51. Sunny Ltd. is studying the possible acquisition of Rainy Ltd. and the following information is available:

	Sunny Ltd.	**Rainy Ltd.**
Profit after tax	**Rs. 3,00,000**	**Rs. 75,000**
Equity share outstanding	**Rs. 50,000**	**Rs. 10,000**
P/E multiple	**3**	**2**

If the merger takes place by exchange of equity shares based on market price, What is the EPS of the new firm?

Answer 51.

Exchange of shares on the basis of market price:

Market price of shares of Sunny Ltd. = Rs. 3,00,000 ÷ 50,000 × 3 = Rs. 18

Market price of shares of rainy Ltd. = Rs. 75,000 ÷ 10,000 × 2 = Rs. 15

Exchange Ratio = Rs. 15 / Rs. 18 = 0.833

Number of shares to be issued by Sunny Ltd. = 10,000 × 0.833 = 8330 shares

Total earnings of Sunny Ltd. = Rs. 3,75,000

Earnings per share = Rs. 3,75,000 ÷ Rs. 58,330 = Rs. 6.429 [Say Rs. 6.43 per share]

Q. 52. A company belongs to a risk class for which the appropriate capitalization rate is 10 per cent. It currently has outstanding 25,000 shares selling at Rs. 100 each. The firm is contemplating the declaration of dividend of Rs. 5 per share at the end of the current financial year. The company expects to have a net income of Rs. 2.5 lakh and has a proposal for making a new investment of Rs. 5 lakhs.

Show that under the Modigliani and Miller assumptions, the payment of dividend does not affect the value of the firm.

Answer 52.

Value of the firm under MM assumptions when dividends are paid –

$$\text{Value of firm} = \frac{1}{1+K_e}[nD_1 + (n+\Delta n)P_1 - I + E - nD_1] = \frac{(n+\Delta_n)P_1 - 1 + E}{1+K_e}$$

Where:

nD_1 = Total dividends paid at end of period 1

n = Number of shares outstanding at the beginning of the period
Dn = Additional shares during the period
P_1 = Market price of a share at end of period 1
I = Total amount required for capital budget
E = Earnings during the period
K_e = cost of equity capital

$$= \frac{\left(\frac{25,000}{1} + \frac{75,000}{21}\right) \text{Rs. } 105 - \text{Rs. } 5,00,000 + 2,50,000}{1.10} = \text{Rs. } 25,00,000$$

When dividends are not paid

$$V = \frac{\left(\frac{25,000}{1} + \frac{75,000}{11}\right) \text{Rs. } 115 - \text{Rs. } 5,00,000 + 2,50,000}{1.10} = \text{Rs. } 25,00,000$$

Thus under this approach the payments of dividend or otherwise, does not affect the value of the firm.

Q. 53. True value Ltd. is planning to raise funds through issue of common stock for the first time. However, the management of the company is not sure about the value of the company and therefore it attempts to study similar companies in the same line which are comparable to True value in most of the aspects.

From the following information, you are required to compute the value of True value Ltd. using the comparable firms approach.

(Rs. in crore)

Company	*True value Ltd.* Rs.	*Jewel-value Ltd.* Rs.	*Real value Ltd.* Rs.	*Unique value Ltd.* Rs.
Sales	**250**	**190**	**210**	**270**
Profit after tax	**40**	**30**	**44**	**50**
Book value	**100**	**96**	**110**	**128**
Market value		**230**	**290**	**440**

The value feels that 50% weightage should be given to earnings in the valuation process; sales and book value may be given equal weightages.

Answer 53.

The valuation multiples of the comparable firms are as follows :

Particular	Jewel-value Ltd.	Real value Ltd.	Unique value Ltd.	Average
Prices/Sales ratio	1.21	1.38	1.62	1.403
Price/Earnings ratio	7.67	6.59	8.80	7.69
Price/Book value ratio	2.39	2.63	3.43	2.82

Based on the above multiples, the value of True value Ltd. is estimated to be Rs. 311.99 crore. As per working below :

Particular	Multiple Average	Parameter Rs. cr.	Value Rs. cr.
Prices/Sales	1.403	250	350.750
Price/Earnings	7.69	40	307.600
Price/Book value	2.82	100	282.000

The weighted value of True value Ltd. using the comparable firm approach is
Rs. (350.750 × 1 + 307.600 × 2 + 282.000 × 1) / 4 = Rs. 311.99 crore.

Alternative :
Rs. (350.750 × 0.25 + 307.600 × 0.50 + 282.000 × 0.25) = Rs. 311.99 crore.

Q. 54. Ritz Ltd's assets are currently valued at Rs. 100 lakh. The standard deviation in this asset value is 40%. The face value of debt is Rs. 80 lakhs (it is zero coupon debt with 10 years left to maturity). The 10 years Treasury bond rate is 10%.
Based on the information and future date (given $d_1 = 1.5994$ and $d_2 = 0.3345$) given find the
(i) Value of equity as a call option of the firm
(ii) Value of the outstanding debt.

Answer 54.

Value of the underlying asset S = Value of the firm = Rs. 100 lakh

Exercise Price K = Face value of outstanding debt = Rs. 80 lakh

Life of the option = t = Life of zero coupon debt = 10 years

Variance in the value of the underlying Asset = s^2 = variance in firm value = 0.16, Riskless rate = r = 10%

Now, values for $N(d_1)$ and $N(d_2)$, as given (*), are 0.9451 and 0.6310 respectively.

Hence, (i) Value of the call, ie call price, $vc = S \times N(d_1) - Kxe^{-rt} \times N(d_2)$

$= 100\ (0.9451) - 80\ e^{(-0.10)(10)} \times 0.6310 = 75.94$

Value of the call = Rs. 75.94 lakh.

And (ii) The estimated value of the outstanding debt is

(S – Vc) = Rs. 100 lakh – Rs. 75.94 lakh = Rs. 24.06 lakh.

(*) If the values were not given, we could have derived them by using the following formulae from 'Black and Scholes' model:

$$d_1 = [\text{In } \{So/E\} + \{r + 0.5\sigma^2\}\, t]/\sigma\sqrt{t}$$

$$= \text{In (Rs. 100/80)} + [.10 + \frac{1}{2}(.40)^2]10/.40\sqrt{10}$$

$$= .223 + 1.80 = 2.023 / 1.2649 = 1.5994;$$

$$d_2 = [\text{In } \{So/E\} + \{r - 0.5\sigma^2\}\, t]/\sigma\sqrt{t}$$

$$= 0.3345$$

Table values for 1.5994 = 0.4451 and for 0.3345 = 0.1310
Both d_1 and d_2 are positive

So, $Nd_1 = N(1.5994) = 0.5 + 0.4451 = 0.9451$ and
$Nd_2 = N(0.3345) = 0.5 + 0.1310 = 0.6310.$

Q. 55. From the last 5 years annual reports of Queen India Limited, the following information about dividend declared has been collected:

Year	Rate of Dividend
2004-05	**10%**
2005-06	**12%**
2006-07	**18%**
2007-08	**22%**
2008-09	**25%**

The average dividend yield in the Industry is estimated to be 8%. If the nominal value of the company's share is Rs. 10, then determine the value per share of Queen India Limited using the Dividend Yield Method (Use Weighted Average Method for determine the average dividend rate of the company).

Answer 55.

Year	Rate of Dividend	Weight	Product
2004-05	10%	1	10.00%
2005-06	12%	2	24.00%
2006-07	18%	3	54.00%
2007-08	22%	4	88.00%
2008-09	25%	5	125.00%
	Total		301.00%

Weight Average Rate of Dividend : 20.07%

Value per Share : Rs. 25.08.

Q. 56. What do you mean by Acquisition?

Answer 56.

Acquisition refers to the acquiring of ownership right in the property and asset without any combination of companies. Thus in acquisition two or more companies may remain independent, separate legal entity, but there may be change in control of companies. Acquisition results when one company purchase the controlling interest in the share capital of another existing company in any of the following ways :

(a) By controlling interest in the other company. By entering into an agreement with a person or persons holding
(b) By subscribing new shares being issued by the other company.
(c) By purchasing shares of the other company at a stock exchange, and
(d) By making an offer to buy the shares of other company, to the existing shareholders of that company.

Q. 57. Explain the term 'Demerger'?

Answer 57.

It has been defined as a split or division. As the same suggests, it denotes a situation opposite to that of merger. Demerger or spin-off, as called in US involves splitting up of conglomerate (multi-division) of company into separate companies.

This occurs in cases where dissimilar business are carried on within the same company, thus becoming unwieldy and cyclical almost resulting in a loss situation. Corporate restructuring in such situation in the form of demerger becomes inevitable. Merger of SG chemical and Dyes Ltd. with Ambalal Sarabhai enterprises Ltd. (ASE) has made ASE big conglomerate which had become unwieldy and cyclic, so demerger of ASE was done.

A part from core competencies being main reason for demerging companies according to their nature of business, in some cases, restructuring in the form of demerger was undertaken for splitting up the family owned large business empires into smaller companies.

The historical demerger of DCM group where it split into four companies (DCM Ltd., DCM Shriram industries Ltd., Shriram Industrial Enterprise Ltd. and DCM Shriram consolidated Ltd.) is one example of family units splitting through demergers. Such demergers are accordingly, more in the nature of family settlements and are affected through the courts order.

Thus, demerger also occur due to reasons almost the same as mergers i.e. the desire to perform better and strengthen efficiency, business interest and longevity and to curb losses, wastage and competition. Undertakings demerge to delineate businesses and fix responsibility, liability and management so as to ensure improved results from each of the demerged unit.

Demerged Company, according to Section (19AA) of Income Tax Act, 1961 means the company whose undertaking is transferred, pursuant to a demerger to a resulting company.

Resulting company, according to Section2(47A) of Income Tax Act,1961 means one or more company, (including a wholly owned subsidiary thereof) to which the undertaking of the demerged company is transferred in a demerger, and the resulting company in consideration of such transfer of undertaking issues shares to the shareholders of the demerged company and include any authority or body or local authority or public sector company or a company established, constituted or formed as a result of demerger.

Q. 58. What do you mean by Reverse Merger?

Answer 58.

Normally, a small company merges with large company or a sick company with healthy company. However in some cases, reverse merger is done. When a healthy company merges with a sick or a small company is called reverse merger. This may be for various reasons. Some reasons for reverse merger are :

(a) The transferee company is a sick company and has carry forward losses and Transferor Company is profit making company. If Transferor Company merges with the sick transferee company, it gets advantage of setting off carry forward losses without any conditions. If sick company merges with healthy company, many restrictions are applicable for allowing set off.

(b) The transferee company may be listed company. In such case, if Transferor Company merges with the listed company, it gets advantages of listed company, without following strict norms of listing of stock exchanges.

In such cases, it is provided that on date of merger, name of Transferee Company will be changed to that of Transferor Company. Thus, outside people even may not know that the transferor company with which they are dealing after merger is not the same as earlier one. One such approved in Shiva Texyarn Ltd.

Q. 59. Identify the forces that drive M&A Activities.

Answer 59.

The major forces which drive M&A activities since the early 1990's have been identified as the following:

(i) Rapid pace of technological change;

(ii) Low costs of communication and transportation;

(iii) Globalization and global markets;

(iv) Nature of competition in terms of forms, sources and intensity;

(v) Emergence of new types of industries;

(vi) Regulation in some industries and sectors;

(vii) Liberalization in some industries and sectors;

(vii) Growing inequalities in incomes and wealth.

Merger activity generally comes in waves, and is most common when shares are overvalued. The late 1990's saw fevered activity. Then the pace slowed in most industries, particularly after September 11, 2001. It picked up again in mid-2003 as companies that weathered the global recession sought bargains among their battered brethren. By the start of 2006, a mergers and acquisitions boom was in full swing, provoking a nationalist backlash in some European countries. The future of the merger wave now depends on how deep the downturn in private equity proves to be.

Q. 60. What is the possible causes of different types of Merger?

Answer 60.

An extensive appraisal of each merger scheme is done to patterns the causes of mergers. These hypothesized causes (motives) as defined in the mergers schemes and explanatory statement framed by the companies at the time of mergers can be conveniently categorized based on the type of merger. The possible causes of different type of merger schemes are as follows :

(i) Horizontal merger : These involve mergers of two business companies operating and competing in the same kind of activity. They seek to consolidate operations of both companies. These are generally undertaken to :

(a) Achieve optimum size

(b) Improve profitability

(c) Carve out greater market share

(d) Reduce its administrative and overhead costs.

(ii) Vertical merger : These are mergers between firms in different stages of industrial production in which a buyer and seller relationship exists. Vertical merger are an integration undertaken either forward to come close to customers or backwards to come close to raw materials suppliers. These mergers are generally endeavoured to :

(a) Increased profitability

(b) Economic cost (by eliminating avoidable sales tax and excise duty payments)

(c) Increased market power

(d) Increased size

(iii) Conglomerate merger : These are mergers between two or more companies having unrelated business. These transactions are not aimed at explicitly sharing resources, technologies, synergies or product. They do not have an impact on the acquisition of monopoly power and hence are favoured throughout the world. They are undertaken for diversification of business in other products, trade and for advantages in bringing separate enterprise under single control namely :

(a) Synergy arising in the form of economies of scale.

(b) Cost reduction as a result of integrated operation.

(c) Risk reduction by avoiding sales and profit instability.

(d) Achieve optimum size and carve out optimum share in the market.

(iv) Reverse mergers : Reverse mergers involve mergers of profit making companies with companies having accumulated losses in order to:

(a) Claim tax savings on account of accumulated losses that increase profits.

(b) Set up merged asset base and shift to accelerate depreciation.

(v) Group company mergers : These mergers are aimed at restructuring the diverse units of group companies to create a viable unit. Such mergers are initiated with a view to affect consolidation in order to:

(a) Cut costs and achieve focus.

(b) Eliminate intra-group competition

(c) Correct leverage imbalances and improve borrowing capacity.

Q. 61. What do mean by 'Diversification'?

Answer 61.

A commonly stated motive for mergers is to achieve risk reduction through diversification. The extent, to which risk is reduced, depends upon the correlation between the earnings of the merging entities. While negative correlation brings greater reduction in risk, positive correlation brings lesser reduction in risk. If investors can diversify on their own by buying stocks of companies which propose to merge, they do not derive any benefits from the proposed merger. Any investor who wants to reduce risk by diversifying between two companies, say, ABC Company and PQR Company, may simply buy the stocks of these two companies and merge them into a portfolio. The merger of these companies is not necessary for him to enjoy the benefits of diversification. As a matter of fact, his 'home-made diversification give him far greater flexibility. He can contribute the stocks of ABC Company and PQR Company in any proportion he likes as he is not confronted with a 'fixed' proportion that result from the merger.

Thus, Diversification into new areas and new products can also be a motive for a firm to merge another with it. A firm operating in North India, if merges with another firm operating primarily in South India, can definitely cover broader economic areas. Individually these firms could serve only a limited area. Moreover, products diversification resulting from merger can also help the new firm fighting the cyclical/ seasonal fluctuations. For example, firm A has a product line with a particular cyclical variations and firm B deals in product line with counter cyclical variations. Individually, the earnings of the two firms may fluctuate in line with the cyclical variations. However, if they merge, the cyclically prone earnings of firm A would be set off by the counter cyclically prone earnings of firm B. Smoothing out the earnings of a firm over the different phases of a cycle tends to reduce the risk associated with the firm.

Through the diversification effects, merger can produce benefits to all firms by reducing the variability of firm's earnings. If firm A's income generally rises when B's income generally falls, and *vice-a versa*, the fluctuation of one will tend to set off the fluctuations of the other, thus producing a relatively level pattern of combined earnings. Indeed, there will be some diversification effect as long as the two firm's earnings are not perfectly correlated (both rising and falling together). This reduction in overall risk is particularly likely if the merged firms are in different lines of business.

Q. 62. Discuss in brief the major theories of Mergers & Acquisitions.

Answer 62.

The following theories of mergers and acquisitions are discussed below:

(i) Synergy or Efficiency : In this theory, the total value from the combination is greater than the sum of the values of the component companies operating independently.

(ii) Hubris : The result of the winner's curse, causing bidders to overpay. It is possible that value is unchanged.

(iii) Agency : The total value here is decreased as a result of mistakes or managers who put their own preferences above the well-being of the company.

While the target company always gains, the acquirer gains when synergy accrues from combined operations, and loses under the other two theories. The total value becomes positive under synergy, becomes zero under the second, and becomes negative under the third.

Q. 63. Identify the reasons for Mergers and Acquisitions.

Answer 63.

Mergers and acquisitions are strategic decisions leading to the maximization of a company's growth by enhancing its production and marketing operations. They have become popular in the recent times because of the enhanced competition, breaking of trade barriers, free flow of capital across countries and globalization of business as a number of economies are being deregulated and integrated with other economies. A number of motives are attributed for the occurrence of mergers and acquisitions.

(i) Synergies through Consolidation : Synergy implies a situation where the combined firm is more valuable than the sum of the individual combining firms. It is defined as 'two plus two equal to five' (2 + 2 = 5) phenomenon. Synergy refers to benefits other than those related to economies of scale. Operating economies are one form of synergy benefits. But apart from operating economies, synergy may also arise from enhanced managerial capabilities, creativity, innovativeness, R&D and market coverage capacity due to the complementarily of resources and skills and a widened horizon of opportunities.

An undervalued firm will be a target for acquisition by other firms. However, the fundamental motive for the acquiring firm to takeover a target firm may be the desire to increase the wealth of the shareholders of the acquiring firm. This is possible only if the value of the new firm is expected to be more than the sum of individual value of the target firm and the acquiring firm. For example, if A Ltd. and B Ltd. decide to merge into AB Ltd. then the merger is beneficial if

$$V(AB) > V(A) + V(B)$$

Where

V (AB) = Value of the merged entity
V (A) = Independent value of company A
V (B) = Independent value of company B

Igor Ansoff (1998) classified four different types of synergies. These are :

(a) Operating synergy : The key to the existence of synergy is that the target firm controls a specialized resource that becomes more valuable when combined with the bidding firm's resources. The sources of synergy of specialized resources will vary depending upon the merger. In case of horizontal merger, the synergy comes from some form of economies of scale which reduce the cost or from increase market power which increases profit margins and sales. There are several ways in which the merger may generate operating economies. The firm might be able to reduce the cost of production by eliminating some fixed costs. The research and development expenditures will also be substantially reduced in the new set up by eliminating similar research efforts and repetition of work already done by the target firm. The management expenses may also come down substantially as a result of corporate reconstruction.

The selling, marketing and advertisement department can be streamlined. The marketing economies may be produced through savings in advertising (by reducing the need to attract each other's customers), and also from the advantage of offering a more complete product line (if the merged firms produce different but complementary goods), since a wider product line may provide larger sales per unit of sales efforts and per sales person. When a firm having strength in one functional area acquires another firm with strength in a different functional area, synergy may be gained by exploiting the strength in these areas. A firm with a good distribution network may acquire a firm with a promising product line, and thereby can gain by combining these two strength. The argument is that both firms will be better off after the merger. A major saving may arise from the consolidation of departments involved with financial activities e.g., accounting, credit monitoring, billing, purchasing etc.

Thus, when two firms combine their resources and efforts, they will be able to produce better results than they were producing as separate entities because of savings various types of operating costs. These resultant economies are known as synergistic operating economies.

In a *vertical merger,* a firm may either combine with its supplier of input (backward integration) and/or with its customers (forward integration). Such merger facilitates better coordination and administration of the different stages of business stages of business operations-purchasing, manufacturing and marketing –eliminates the need for bargaining (with suppliers and/or customers), and minimizes uncertainty of supply of inputs and demand for product and saves costs of communication.

An example of a merger resulting in operating economies is the merger of Sundaram Clayton Ltd. (SCL) with TVS-Suzuki Ltd. (TSL).By this merger, TSL became the second largest producer of two –wheelers after Bajaj. The main objective motivation for the takeover was TSL's need to tide over its different market situation through increased volume of production. It needed a large manufacturing base to reduce its production costs. Large amount of funds would have been required for creating additional production capacity. SCL also needed to upgrade its technology and increase its production. SCL's and TCL's plants were closely located which added to their advantages. The combined company has also been enabled to share the common R&D facilities.

(b) Financial synergy : Financial synergy refers to increase in the value of the firm that accrues to the combined firm from financial factors. There are many ways in which a merger can result into financial synergy and benefit. A merger may help in:

- Eliminating financial constraint
- Deployment surplus cash
- Enhancing debt capacity
- Lowering the financial costs
- Better credit worthiness

***Financial Constraint* :** A company may be constrained to grow through internal development due to shortage of funds. The company can grow externally by acquiring another company by the exchange of shares and thus, release the financing constraint.

***Deployment of Surplus Cash* :** A different situation may be faced by a cash rich company. It may not have enough internal opportunities to invest its surplus cash. It may either distribute its surplus cash to its shareholders or use it to acquire some other company. The shareholders may not really benefit much if surplus cash is returned to them since they would have to pay tax at ordinary income tax rate. Their wealth may increase through an increase in the market value of their shares if surplus cash is used to acquire another company. If they sell their shares, they would pay tax at a lower, capital gains tax rate. The company would also be enabled to keep surplus funds and grow through acquisition.

***Debt Capacity* :** A merger of two companies, with fluctuating, but negatively correlated, cash flows, can bring stability of cash flows of the combined company. The stability of cash flows reduces the risk of insolvency and enhances the capacity of the new entity to service a larger amount of debt. The increased borrowing allows a higher interest tax shield which adds to the shareholders wealth.

***Financing Cost* :** The enhanced debt capacity of the merged firm reduces its cost of capital. Since the probability of insolvency is reduced due to financial stability and increased protection to lenders, the merged firm should be able to borrow at a lower rate of interest. This advantage may, however, be taken off partially or completely by increase in the shareholders risk on account of providing better protection to lenders.

Another aspect of the financing costs is issue costs. A merged firm is able to realize economies of scale in flotation and transaction costs related to an issue of capital. Issue costs are saved when the merged firm makes a larger security issue.

***Better credit worthiness* :** This helps the company to purchase the goods on credit, obtain bank loan and raise capital in the market easily.

RP Goenka's Ceat Tyres sold off its type cord division to Shriram Fibers Ltd. in 1996 and also transfer's its fiber glass division to FGL Ltd., another group company to achieve financial synergies.

(c) Managerial synergy :

One of the potential gains of merger is an increase in managerial effectiveness. This may occur if the existing management team, which is performing poorly, is replaced by a more effective management team. Often a firm, plagued with managerial inadequacies, can gain immensely from the superior management that is likely to emerge as a sequel to the merger. Another allied benefit of a merger may be in the form of greater congruence between the interests of the managers and the shareholders.

A common argument for creating a favorable environment for mergers is that it imposes a certain discipline on the management. If lackluster performance renders a firm more vulnerable to potential acquisition, existing managers will strive continually to improve their performance.

(d) Sales synergy :

These synergies occurs when merged organization can benefit from common distribution channels, sales administration, advertising, sales promotion and warehousing.

The Industrial Credit and Investment Corporation of India Ltd. (ICICI) acquired Tobaco Company, ITC Classic and Anagram Finance to obtain quick access to a well dispersed distribution network.

Q. 64. Who are the participants in the Merger and Acquisition Process?

Answer 64.

There are many professionals who play an essential role in the successful completion of a deal.

(a) Investment Bankers : Investment bankers are always at the forefront of the acquisition process. They offer strategic and tactical advice, screen potential buyers and sellers, make initial contact with a seller and buyer and provide negotiation support, valuation and deal structuring.

(b) Lawyers : The legal framework surrounding a typical transaction has become so complicated that no one individual can have sufficient expertise to address all the issues. So, legal teams consist of more than a dozen lawyers each of whom represents a specialised aspect of the law.

(c) Accountants : Accountants perform the role of auditors by reviewing the target's financial statements and operations through a series of interviews with senior and middle level managers.

(d) Valuation Experts : They build models that incorporate various assumptions such as costs or revenues growth rate.

(e) Institutional Investors : Institutional investors can announce how they intend to vote on a matter and advertise their position in order to seek support and have more influence.

(f) Arbitrageurs : Arbitrageurs provide market liquidity during transactions. With the number of merger arbitrageurs increasing, they are becoming more proactive in trying to anticipate takeover situations. Their objective is to identify the target before the potential acquirer is required by law to announce its intentions.

Q. 65. Why a firm diversify?

Answer 65.

A firm wants to diversify to achieve :

- Sales and growth stability
- Favourable growth developments
- Favourable competition shifts
- Technological changes

(a) External and Internal Growth : A company may expand and/or diversify its markets internally or externally. If the company cannot grow internally due to lack of physical and managerial resources, it can grow externally by combining its operations with other companies through mergers and acquisitions. Mergers and acquisitions may help to accelerate the pace of a company's growth in a convenient and inexpensive manner.

For example, RPG Group had a turnover of only Rs. 80 crores in 1979. This has increased to about Rs. 5600 crores in 1996. This phenomenal growth was due to the acquisitions of a several companies by the RPG Group. Some of the companies acquired are Asian cables, Ceat, Calcutta Electricity Supply etc.

(b) Market Share : A merger can increase the market share of the merged firm. The increased concentration or market share improves the profitability of the firm due to economies of scale.

The acquisition of Universal Luggage by Blow Plast is an example of limiting competition to increase market power. Before the merger, the two companies were competing fiercely with each other leading to a severe price war and increased marketing costs. As a result of the merger, Blow Plast has obtained a strong hold on the market and now operates under near monopoly situation. Yet another example is the acquisition of Tomco by Hindustan Lever. Hindustan Lever at the time of merger was expected to control one-third of three million ton soaps and detergents markets and thus, substantially reduce the threat of competition.

(c) Purchase of assets at bargain price : Mergers may be explained by the opportunity to acquire assets, particularly land, mined rights, plant and equipment at lower cost than would be incurred if they were purchased or constructed at current market prices. If market prices of many stocks have been considerably below the replacement cost of the assets they represent, expanding firm considering constructing plants developing mines, or buying equipment.

(d) Increased external financial capability : Many mergers, particularly those of relatively small firms into large ones, occur when the acquired firm simply cannot finance its operations. This situation is typical in a small growing firm with expanding financial requirements. The firm has exhausted its bank credit and has virtually no access to long term debt or equity markets. Sometimes the small firms have encountered operating difficulty and the bank has served notice that its loans will not be renewed. In this type of situation, a large firm with sufficient cash and credit to finance the requirements of the smaller one probably can obtain a good situation by making a merger proposal to the small firm. The only alternative the small firm may have is to try to interest two or more larger firms in proposing merger to introduce completion into their bidding for the acquisition.

(e) Increased managerial skills : Occasionally, a firm will have good potential that it finds itself unable to develop fully because of deficiencies in certain areas of management or an absence of needed product or production technology. If the firm cannot hire the management or develop the technology it needs, it might combine with a compatible firm that has the needed managerial personnel or technical expertise. Any merger, regardless of the specific motive for it, should contribute to the maximization of owner's wealth.

(f) Reduction in tax liability : Under Income Tax Act, there is a provision for set-off and carry forward of losses against its future earnings for calculating its tax liability. A loss making or sick company may not be in a position to earn sufficient profits in future to take advantage of the carry forward provision. If it combines with a profitable company, the combined company can utilize the carry forward loss and save taxes with the approval of government. In India, a profitable company is allowed to merge with a sick company to set-off against its profits the accumulated loss and unutilized depreciation of that company. A number of companies in India have merged to take advantage of this provision.

The following is the list of some companies along with the amount of tax benefits enjoyed:

- Orrisa synthesis merged with Straw product Ltd. (Rs. 16 crores)
- Ahmadabad cotton Mills merged with Arvind Mils (Rs. 3.34 crores)
- Sidhpur Mills merged with Reliance Industries Ltd. (Rs. 3.34 crores)
- Alwyn Missan merged with Mahinder and Mahindra Ltd. (Rs. 2.47 crores)
- Hyderabad Alwyn merged with Voltas Ltd. (Rs. 1600 crores)

(g) Economies of Scale : Economies of scale arise when increase in the volume of production leads to a reduction in the cost of production per unit. Merger may help to expand volume of production without a corresponding increase in fixed costs. Thus, fixed costs are distributed over a large volume of production causing the unit cost of production to decline. Economies of scale may also arise from other indivisibilities such as production facilities, management functions and

management resources and systems. This happens because a given function, facility or resource is utilized for a large scale of operation. For example, a given mix of plant and machinery can produce scale economies when its capacity utilization is increased. Economies will be maximized when it is optimally utilized. Similarly, economies in the use of the marketing function can be achieved by covering wider markets and customers using a given sales force and promotion and advertising efforts. Economies of scale may also be obtained fro the optimum utilization of management resource and systems of planning, budgeting, reporting and control. A company establishes management systems by employing enough qualified professionals irrespective of its size. A combined firm with a large size can make the optimum use of the management resource and systems resulting in economies of scale.

(g) Vertical Integration: Vertical integration is a combination of companies of companies business with the business of a supplier or customer generally motivated by a pure desire :

(a) To secure a source of supply for key materials or sources

(b) To secure a distribution outlet or a major customer for the company's products.

(c) To improve profitability by expanding into high margin activities of suppliers and customers.

Thus, vertical merger may take place to integrate forward or backward. Forward integration is where company merges to come close to its customers. A holiday tour operator might acquire chain of travel agents and use them to promote his own holiday rather than those of rival tour operators. So forward or downstream vertical integration involves takeover of customer business.

Tata Tea's acquisition of consolidated coffee which produces coffee beans and Asian Coffee, which possesses coffee beans, was also backward integration which helped reduce exchange inefficiencies by eliminating market transactions. The recent merger of Samtel Electron services (SED) with Samtel Color Ltd. (SCL) entailed backward integration of SED which manufactures electronic components required to make picture tubes with SCL, a leading maker of color picture tube.

Q. 66. What are the defence mechanisms to prevent mergers and acquisitions?

Answer 66.

Defence mechanisms are the tools used by a company to prevent its takeover. In order to ward off takeover bid, the companies may adopt:

I. Preventive Measures

II. Defence strategies in the wake of takeover bid.

These defensive measures are elaborated below:

1. Advance / Preventive Measures:
   (a) Joint holding / Agreements between major shareholders
   (b) Interlocking / Cross holding of shares.
   (c) Issue of block of shares to friends and Associates.
   (d) Defensive merger with own group company.
   (e) Non-voting shares / Preference shares
   (f) Convertible debentures
   (g) Maintaining part of capital uncalled for making emergency requirements.
   (h) Long term service agreements

2. Defence in the wake of takeover bid:
   (a) Commercial Strategies
      (i) Dissemination of favourable information to keep shareholders abreast of latest developments.

- Market coverage
- Product demand
- Industries outlook and resultant profit.

(ii) Step up dividend and update share price

(iii) Revaluation of Assets

(iv) Capital structure Re-organization

(v) Unsuitability of offertory to be highlighted while communicating with shareholders.

(b) Tactical, defence strategies

(i) Friendly purchase of shares

(ii) Emotional attachment loyalty / participation

(iii) Recourse to legal action

(iv) Operation white Knight.

White Knight enters the fray when the target company is raided by hostile suitor. White Knight offers bid to target company – higher than the offer of the predator that may not remain interested in the bid.

(v) Disposing of Golden jewels : Precious assets of the company are called cream jewels which attract the raider. Hence as a defence strategy, company sells these assets at its own initiative leaving rest of the company intact. Raider may not remain interested thereafter.

(vi) Pac-Man Strategy : In this strategy, the target company attempts to take over the raider. This happens when Target Company is higher than the predator.

(vii) Compensation Packages: Golden parachutes or First class passenger strategy termination package for senior executives is used as protection for Directors.

(viii) Shark Repellants: Companies change and amend their bye laws to make it less attractive for corporate raider.

(ix) Ancillary Poison Pills: Issue of convertible debentures - which when converted dilutes holding percentage of raider and makes it less attractive.

Q. 67. What are the defence mechanisms to prevent mergers and acquisitions?

Answer 67.

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Defence strategies in the wake of takeover bid.

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Defence in the wake of takeover bid:

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  - Industries outlook and resultant profit.
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Q. 68. What is the process of strategic planning?

Answer 68.

The process of strategic planning is discussed below :

(1) Monitoring environments :

A key to all approaches to strategic planning is continuous monitoring of the external environments. The environments should encompass both domestic and international dimensions and include analysis of economic, technological, political, social and legal factors. Different organization may give different emphasis and weights to each of the categories.

(2) Stakeholders :

Strategic planning process to take into account the diverse stakeholders of organization, which have interest in the organization i.e., customers, stockholders, creditors, employees, Government, Communities, Media, Political group, Educational institutions, financial community and international entity.

(3) Essential elements in strategic planning processes:

(i) Assessment of changes in the environment.
(ii) Evaluation of company capabilities and limitations.
(iii) Assessment of expectations of stakeholders.
(iv) Analysis of company, competitors, industry, domestic economy, and international economies.
(v) Formulation of missions, goals and policies for master strategy.
(vi) Development of sensitivity to critical external environmental changes.
(vii) Formulation of Long-range strategy programmes.
(viii) Formulation of internal organization performance measurements.
(ix) Formulation of mid-range and short run plans.
(x) Organization, Funding and other method to implement all preceding elements.
(xi) Information flow and feedback system
(xii) Review and evaluation process.

(4) Organization cultures:

How organization carries out the strategic thinking and planning processes will vary with its cultures.

(i) Strong top leadership vs. Team appraisals.
(ii) Management by formal paperwork vs. Management by wandering around.
(iii) Individual decisions vs. Group decisions.
(iv) Rapid evaluation based on performance vs. Long term relationship based on loyalty.
(v) Rapid feedback for change vs. Formal bureaucratic rules and procedures.
(vi) Risk taking encouraged vs. one mistake and you are out.
(vii) Narrow responsibility vs. everyone in this is salesmen cost controller, product quality manpower or so on.
(viii) Learn from customer's vs. we know what is best for customers.

(5) Alternative strategy methodologies:

(i) SWOT or WOTS Up: Inventory and analysis of organization strength, weaknesses, environmental opportunities, and threats.
(ii) Gap Analysis: Assessment of goals vs. forecasts or projections.
(iii) Top down / Bottom up: Company forecasts v/s aggregation of segments.
(iv) Computer models: Opportunity for detail and complexity.
(v) Competitive Analysis: Assess customers, suppliers, new entrants, products and product substitutability.
(vi) Synergy : Look for complementarily
(vii) Logical incremental: Well supported moves from current bases.
(viii) Muddling through: Incremental changes selected from small no. of policy alternatives.
(ix) Comparative histories: Learn from experience of others.
(x) Delphi Technique: Iterated opinion reactions.
(xi) Discussion group technique: Simulating ideas by unstructured discussions aimed at consensus.
(xii) Adaptive Processes: Periodic reassessment of environmental opportunity and organization capability adjustment required.
(xiii) Environmental scanning: Continuous analysis of relevant environments.
(xiv) Intuition: Insights of brilliant managers.

(xv) Entrepreneurship: Creative leadership.
(xvi) Discontinuities: Crafting strategy from recognition of trend shifts.
(xvii) Brain storming: Free form repeated exchange of ideas.
(xviii) Game theory: Logical assessment of competitor's actions and reactions.
(xix) Game playing: Assign roles and simulate scenarios.

(6) Alternative Analytical framework:

(i) Product Life cycles: Introduction, Growth, maturity, and decline stages with changing opportunities and threats.
(ii) Learning curve: Costs decline with cumulative volume experience resulting in first mover competitive advantages.
(iii) Competitive Analysis: Industry structure, rivals reactions, supplies and customer relations, product positioning.
(iv) Cost leadership : Low cost advantages
(v) Product differentiation: Develop product configuration that achieve customer preference.
(vi) Value chain Analysis: Controlled cost outlays to add product characteristics valued by customers.
(vii) Niche opportunities: Specialize to needs or interest of customer groups.
(viii) Product breadth: Carryover of organizational capabilities.
(ix) Correlation's with profitability: Statistical studies of factors associated with high profitability measures.
(x) Market share: High market share associated with competitive superiority.
(xi) Product quality: Customer allegiance and price differentials for higher quality.
(xii) Technological leadership: Keep at frontiers of knowledge.
(xiii) Relatedness matrix: Unfamiliar markets and products involve greatest risk.
(xiv) Focus matrix : Narrow vs. Broad
(xv) Growth / share matrix: Aim for high market share in high growth markets.
(xvi) Attractiveness matrix : aim to be strong in attractive industries
(xvii) Global matrix: Aim for competitive strength in attractive countries.

(7) Approaches to formulating Mergers and Acquisitions strategy:

(i) Boston Consulting Group
(ii) The Porter Approach
(iii) Adaptive Processes

(i) Boston Consulting Group:

The three important concepts of BCG are as follows:

- Experience curve
- Product life cycle
- Portfolio balance

Experience curve: It represents a volume-cost relationship. It is argued that as the cumulative historical volume of output increases, unit cost will fall at a geometric rate. This will result from specialization, standardization, learning and scale effects. The firm with target cumulative output will have lower costs, suggesting a strategy of early entry and price policy to develop volume.

Product life cycle: Every product or a line of business proceeds through four phases:

a. Development

b. Growth

c. Maturity

d. And decline

During first two stages, sales and growth is rapid and entry is easy. As individual firms gain experience and as growth slows in last 2 stages, entry becomes difficult, because of cost advantages of incumbents.

In declining stage of product line, (as other substitutes emerge) sales and prices decline, firms which have not achieved a favourable position on the experience curve become unprofitable and either merge or exit from the Industry.

Portfolio Approach: Rapid growth may require substantial investments. As requirements for growth diminish, profits may generate more funds than required for investments.

Portfolio balances seeks to combine

- Attractive investment segments (stars)
- Cash generating segments (cash cows)
- Eliminating segments with unattractive prospects (Dogs)

Overall, total cash inflows will balance and corporate investments.

(ii) The Porter Approach:

Michael Porter suggests the following:

- Select an attractive industry.
- Develop competitive advantage through cost leadership and product differentiation.
- Develop attractive value chain.

o ***Attractive Industry in which:***

- Entry barriers are high.
- Suppliers and buyers have only modest bargaining power.
- Substitute products or services are few.
- Rivalry among 'competitors' is stable.

o ***Unattractive Industry will have:***

- Structural flows
- Including plethora of substitute materials
- Powerful and price sensitive buyers.
- Excessive rivalry caused by high fixed costs and large group of competitors, many of whom are state supported, e.g. Steel Industry.

o ***Competitive Advantage:***

It may be based on cost leadership, product differentiation. Cost advantage is achieved by consideration of wide range of checklist factors including BCG's learning curve theory.

o ***Value chain:***

A matrix that relates the support activities of:

- Infrastructure
- Human Resource Management
- Technology development
- Procurement
- Operations

- Marketing / Sales / Service

Aim is to minimize outlays in adding characteristics valued by customers.

(iii) Adaptive Processes :

Adaptive processes orientation involves marketing resources to investment opportunities under environmental uncertainty compounded with uncertain competitor's actions and reactions. It involves ways of thinking which assess competitor's actions and reactions in relation to changing environments.

Q. 69. What are the Reasons for Strategic Success and Failure?

Answer 69.

Common Strategic traps :

Strategy	Ground Result
(a) Desire to move an acquisition policy or "aggressive acquisition policy".	(a) A policy of this kind begets unrelated and messy situation that lead to "Conglomerates" at best and at worst a de stabilizing complexity that can be lethal.
(b) Desire to acquire new technology hitches, more regulatory approvals all combined to keep prize out of reach. In many cases the previous owners sold out as a means to resolving this problem.	(b) More investment, more details to be resolved, unforeseen technical
(c) Attractive past experience	(c) Purchase of obsolete concept- particularly past performance of aging firms.
(d) Quest for complementarities	(d) Synergy may be illusory and may drive away the company from their core business to related but highly dangerous area.
(e) Inability to walk away	(e) Once negotiations start, desire increases. Nothing seems to deter buyer. Price increases absorbed.

Q. 70. Identity four different approaches to business valuation.

Answer 70.

Discounted Cash Flow Valuation : This approach is also known as the Income approach, where the value is determined by calculating the net present value of the stream of benefits generated by the business or the asset. Thus, the DCF approach equals the enterprise value to all future cash flows discounted to the present using the appropriate cost of capital.

Relative Valuation : This is also known as the market approach. In this approach, value is determined by comparing the subject company or asset with other companies or assets in the same industry, of the same size, and/or within the same region, based on common variables such as earnings, sales, cash flows, etc.

The Profit multiples often used are: (a) Earnings before interest tax depreciation and amortization (EBITDA), (b) Earnings before interest and tax (EBIT), (c) Profits before tax, and (d) Profits after tax.

Historic, current and forecast profits/earnings are used as multiples from the quoted sector and actual transactions in the sector.

Contingent Claim Valuation: This approach uses the option pricing models to estimate the value of assets.

Asset-based approach: A fourth approach is called asset-based approach.

The valuation here is simply the difference between the assets and liabilities taken from the balance sheet, adjusted for certain accounting principles.

Two methods are used here:

(a) The Liquidation Value, which is the sum as estimated sale values of the assets owned by a company.

(b) Replacement Cost: The current cost of replacing all the assets of a company.

However, the asset-based approach is not an alternative to the first three approaches, as this approach itself uses one of the three approaches to determine the values.

This approach is commonly used by property and investment companies, to cross check for asset based trading companies such as hotels and property developers, underperforming trading companies with strong asset base (market value vs. existing use), and to work out break – up valuations.