

Question Paper
Equity: Analysis & Valuation (CFA610): July 2008

Section A : Basic Concepts (30 Marks)

- This section consists of questions with serial number 1 - 30.
- Answer all questions.
- Each question carries one mark.
- Maximum time for answering Section A is 30 Minutes.

1. The function of a financial system is to channelize funds from the surplus units to the deficit units. Which [<Answer](#)
of the following statements is **not true** with respect to Indian financial system? [>](#)
- (a) Capital markets enable the flow of capital in the most profitable channels
(b) The performance of the company is reflected in the market price of the equity stock
(c) Primary market is the major channel through which the household savings are mobilized by companies and Government
(d) Primary market helps the shareholders to find buyers for trading, thus it creates liquidity in the capital markets
(e) Secondary market is also known as open auction market.
2. Market timing approach tends to determine when to be in the market, when to be out of the market and [<Answer](#)
when to short sell. Which of the following components **does not** include in market timing? [>](#)
- (a) Interest rate trend
(b) Inflation rate
(c) Investor sentiments
(d) Valuation of the market as a whole
(e) Technical state of the market.
3. Which of the following statements is **not true** with respect to price patterns? [<Answer](#)
[>](#)
- (a) The longer it takes for prices to move out of the pattern, the stronger is the base of the new trend
(b) A valid breakout can be confirmed if the penetration of the boundaries of a pattern are marked by a price change equal to or more than 3%
(c) The head and shoulders pattern occurs at the end of a bull market
(d) A runaway gap represents gaps occurring before a trend ends
(e) After a flag formation, prices move in the same direction as before.
4. Which of the following is/are **true** with respect to CAPM, if investors expect the inflation rate to fall due [<Answer](#)
changing economic conditions? [>](#)
- I. The slope of the SML would decrease.
II. The required return on an average stock would decrease.
III. The market risk premium would decrease.
- (a) Only (I) above
(b) Only (II) above
(c) Only (III) above
(d) Both (I) and (III) above
(e) All (I), (II) and (III) above.
5. The following information pertains to Marico Ltd.: [<Answer](#)
[>](#)

ROA	12%
Book value	Rs.18
Total asset/Net worth	3.00

The EPS of Marico Ltd., is

- (a) Rs.5.21
(b) Rs.6.48
(c) Rs.7.21
(d) Rs.8.36
(e) Rs.9.19.

6. Industries evolve through four stages – the pioneering stage, the expansion stage, the stabilization stage and the declining stage. Which of the following statements is/are **true** in case of the pioneering stage of the industry life cycle? [<Answer](#)
≥
- It is difficult to predict which firms will succeed and which firms will fail.
 - Firms pay a high level of dividends.
 - Industry growth is very rapid.
- Only (I) above
 - Only (II) above
 - Only (III) above
 - Both (I) and (III) above
 - Both (II) and (III) above.
7. Which of the following statements is **not true** with respect to Rounding Tops? [<Answer](#)
≥
- A rounding top is an important reversal pattern
 - It indicates a slow change in the demand-supply balance
 - In this pattern the volume behave opposite to the price pattern, resulting in low volume when the price is at the highest level
 - It is difficult to obtain support or resistance levels or breakout levels for rounding tops
 - These patterns typically develop within a short span of time.
8. Alfa Ltd., which is experiencing constant growth rate has generated earnings per share of Rs.18.50 and Rs.24.00 in the previous and current year respectively. The company follows a dividend payout ratio of 28%, which is expected to remain at the same level. If the required rate of return is 35% p.a., the price of the share should be [<Answer](#)
≥
- Rs.127.27
 - Rs.149.78
 - Rs.155.50
 - Rs.165.41
 - Rs.184.93.
9. Bulldog bonds are issued [<Answer](#)
≥
- In UK by foreign companies and denominated in foreign currency
 - In UK by foreign companies and denominated in Pound Sterling
 - In UK by domestic companies but denominated in foreign currency
 - Outside UK by foreign companies but denominated in Pound Sterling
 - Outside UK by UK and denominated in foreign currency.
- 10 Computerized trading systems basically follow two different approaches namely price/quote-driven and order-driven systems. Which of the following statements is **false** with respect to the aforesaid systems? [<Answer](#)
≥
- The quote-driven system allows the market maker to buy a limit order at the bid price and sell it at the offer price
 - In order-driven market the trader submits the order
 - In price-driven market the dealer posts a firm quote and provides free option
 - In price-driven market, the dealer has the risk of being picked off due to the danger in placing the order because of the absence of well developed markets
 - A call auction market is an order-driven market as all the traders openly post their orders and the transaction price is derived through equilibrating the demand and supply of the stock.
- 11 Mr. Suman bought 100 Reliance Energy shares at Rs.500 each on margin trading, with a maintenance margin of 40%. If the stock price falls to Rs.410, the maintenance margin is at [<Answer](#)
≥
- 40%
 - 39%
 - 38%
 - 36%
 - 32%.

12 Following are the details pertaining to a firm:

<Answer
≥

Stable growth rate	5%
Dividend pay-out ratio	25%
Net profit margin	10%
Required rate of return	12%

Calculate the Price-sales ratio.

- (a) 0.225
- (b) 0.310
- (c) 0.338
- (d) 0.375
- (e) 0.420.

13 Which of the following is an assumption of Capital Asset Pricing Model (CAPM)?

<Answer
≥

- (a) Assets can be traded only in multiples of a minimum number of units determined by the regulatory body
- (b) Taxes influence the investment decision
- (c) Transaction costs are negligible
- (d) Investors prefer to take risk, greater the perceived risk of a portfolio, higher the return an investor expects to compensate the risk
- (e) Investors make their investment decisions on the basis of a multi period time horizon.

14 If the risk free rate of return is expected to increase in future and the investors become more risk averse, the security market line (SML) will

<Answer
≥

- (a) Shift up and the slope will increase
- (b) Shift up and the slope will decrease
- (c) Shift down and the slope will increase
- (d) Shift down and the slope will decrease
- (e) Remain unchanged.

15 Which of the following indicates the presence of an intense rivalry in a particular industry?

<Answer
≥

- I. Numerous or equally balanced competitors.
 - II. High growth rate of the industry.
 - III. High fixed cost.
 - IV. Presence of differentiation or switching costs.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Both (I) and (III) above
 - (d) Both (III) and (IV) above
 - (e) (II), (III) and (IV) above.

16 Consider the following data pertaining to a stock:

<Answer
≥

- Current abnormal growth rate = 10%
- Normal growth rate = 5 %
- Current dividend per share = Rs.2.00
- Required rate of return = 12%

If 5 years is the time period during which the current abnormal growth rate will become normal growth rate, the premium on the stock due to abnormal growth rate is

- (a) Rs.1.25
- (b) Rs.2.15
- (c) Rs.3.57
- (d) Rs.4.11
- (e) Rs.5.27.

- 17 The market value of the shares of NIFTY Index on a day is Rs.287190.47 crore. In the base year the aggregate market value of Index was Rs.269.16 crore. The market value of shares of a company which has been amongst the 50 shares since beginning increases by Rs.1240 crore due to recent rights issue. The revised value of base year market capitalization is [<Answer](#)
≥
- (a) Rs. 266.86 crore
 - (b) Rs. 268.00 crore
 - (c) Rs. 270.32 crore
 - (d) Rs. 272.56 crore
 - (e) Rs.1509.16 crore.
- 18 The capital employed by the Majestic Industries is Rs.120 lakh. The weighted average cost of capital for the firm is 12.49%. The net profit made by the company during the year is Rs.30 lakh. The Economic Value Added of the firm according to the residual income method is [<Answer](#)
≥
- (a) Rs. 5 lakh
 - (b) Rs.12 lakh
 - (c) Rs.15 lakh
 - (d) Rs.18 lakh
 - (e) Rs.20 lakh.
- 19 The shares of a company are currently trading at a P/E multiple of 9. The net income of the company is Rs.16 lakh. The company proposes to buy back some of its outstanding shares at 10% premium to its present market price. If the funds required for the buy back are Rs.77.616 lakh, the percentage of shares that can be bought back is [<Answer](#)
≥
- (a) 31%
 - (b) 45%
 - (c) 49%
 - (d) 53%
 - (e) 58%.
- 20 Which of the following statements is/are **true** with respect to support and resistance lines? [<Answer](#)
≥
- I. New highs are reached after a resistance line is penetrated and new lows follow penetration of a support line.
 - II. Prices are said to remain in a congestion zone as long as they fluctuate in narrow ranges within a support and resistance level.
 - III. Prices penetrate support level generally after slowing down from a previous high.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (III) above
 - (d) Both (I) and (II) above
 - (e) Both (II) and (III) above.
- 21 Which of the following statements is/are **false** with regard to Elliott Wave Theory of charting techniques? [<Answer](#)
≥
- I. It was originally applied to Dow Jones industrial averages.
 - II. The complete cycle has 8 waves – five up and three down.
 - III. 3rd wave is always the shortest in five wave advance.
 - IV. Wave A confirms the end of uptrend.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (IV) above
 - (d) Both (II) and (III) above
 - (e) Both (III) and (IV) above.

22 The closing prices of Torrent Cables Ltd., on five consecutive trading days are as under:

<Answer
≥

Days	Closing Prices (Rs.)
0	274.90
1	275.60
2	272.00
3	268.00
4	270.00

The Relative Strength Index For Torrent Cable Ltd. Is

- (a) 47.35
- (b) 49.75
- (c) 50.25
- (d) 50.75
- (e) 51.00.

23 The cost of equity of Hansa Biotech Ltd., is 16% with a projected equity earnings growth rate of 7.5%. The market value of debt is Rs.72 lakh. The total value of the firm is Rs.170 lakh. The free cash flow to equity for the current year is

<Answer
≥

- (a) Rs. 6.8923 lakh
- (b) Rs. 7.7488 lakh
- (c) Rs. 8.4523 lakh
- (d) Rs. 9.5648 lakh
- (e) Rs.10.2569 lakh.

24 In which of the following activities, can ESOPs be used?

<Answer
≥

- I. Buy outs.
 - II. Divestitures.
 - III. Rescue of failing companies.
 - IV. Raising capital.
- (a) Only (II) above
 - (b) Both (I) and (III) above
 - (c) Both (II) and (III) above
 - (d) (I), (II) and (IV) above
 - (e) All (I), (II), (III) and (IV) above.

25 Which of the following is/are **true** for bust-up LBOs?

<Answer
≥

- I. It depends upon the sale of assets of the acquired company to generate returns for the equity investors.
 - II. Equity investors receive the return through the replacement of debt capital with equity and also through any increase in the total market value of company.
 - III. These are usually seen in acquisition of diversified public companies where the equity markets may not fully value the various sub entities of the company.
- (a) Only (II) above
 - (b) Only (III) above
 - (c) Both (I) and (III) above
 - (d) Both (II) and (III) above
 - (e) All (I), (II) and (III) above.

26 In a corporate restructuring a new company is created to takeover the operations of an existing division or unit. The shares of new unit are distributed among existing shareholders on pro-rata basis. This form of corporate downsizing is called

<Answer
≥

- (a) Spin-off
- (b) Split-up
- (c) Split-off
- (d) Equity carve out
- (e) Split-in.

27 Which of the following is/are **false** with respect to Stop Loss Price Order at Bombay Stock Exchange (BSE)? [<Answer](#)
≥

- I. It is an order that allows the price to be specified while entering the order into the system.
 - II. It allows the trading member to place an order that gets activated only when the market price of the relevant security reaches a threshold limit.
 - III. It is an order to buy or sell securities at the best price obtainable at the time of entering the order.
- (a) Only (I) above
 - (b) Only (III) above
 - (c) Both (I) and (III) above
 - (d) Both (II) and (III) above
 - (e) All (I), (II) and (III) above.

28 Which of the following statements is **not true** with respect to value added concepts? [<Answer](#)
≥

- (a) Economic Value Added (EVA) is primarily used for evaluating the performance of management
- (b) EVA cannot be applied to calculate NPV
- (c) EVA serves as a proxy for measuring a stock's performance
- (d) Market Value Added (MVA) serves as a measure of a firm's external performance
- (e) MVA can be computed by discounting the EVA of each year by the WACC.

29 The correlation coefficient of return on stock with market return is negative. Which of the following statements is the implication of the given statement? [<Answer](#)
≥

- (a) On an average, the returns from stock and market move in opposite directions
- (b) The average risk of stock is less than the market risk
- (c) The average return of stock is more than the market return
- (d) Stock has given an above normal return
- (e) Stock has given a below normal return.

30 According to Dividend Discount Model (DDM) of valuation, the difference between required rate of return and growth rate in the earnings of a stock is equal to [<Answer](#)
≥

- (a) Payout ratio
- (b) Sustainable growth rate
- (c) Retention ratio
- (d) Dividend yield
- (e) Turnover ratio.

END OF SECTION A

Section B : Problems/Caselet (50 Marks)

- This section consists of questions with serial number 1 – 6 .
- Answer all questions.
- Marks are indicated against each question.
- Detailed workings/explanations should form part of your answer.
- Do not spend more than 110 - 120 minutes on Section B.

1. Consider the following information pertaining to the returns from two stocks and the market index in different economic scenarios: [<Answer>](#)

Scenario	Probability of scenario	Return (%)		
		Stock A	Stock B	Market
Boom	0.15	20.5	25.5	12
Slow growth	0.25	9.0	7.5	10.5
Stagnation	0.35	-5.0	4.5	-12.5
Recession	0.25	5.0	8.0	2.0

From the above information, you are **required** to:

- a. Calculate the unsystematic risk of the two stocks. (8 marks)
- b. Assuming that SML hold good, determine the Alpha of the two stocks and comment on the same. Also assume a risk free rate of interest of 5.5%. (4 marks)
2. Consider the following data relating to convertible bonds issued recently by S. Kumar Textiles Ltd.: [<Answer>](#)
- | | | |
|------------------------------|---|----------|
| Face Value of the bond | = | Rs.1,000 |
| Coupon Rate of the bond | = | 11% |
| Maturity | = | 3 years |
| Market price of the bond | = | Rs.1,016 |
| Market price of equity share | = | Rs.226 |
| Conversion rate | = | 4 |
- (i.e., no. of shares that will be obtained on conversion of bond)
- Latest dividend per share = Rs.4
- Using Traditional Valuation Method for the above convertible bond you are **required** to calculate
- a. Break even period. (3 marks)
- b. Payback period. (3 marks)
- c. Discuss the implications of the result arrived under (a) and (b) above. (2 marks)
3. Mr. Kaushik Gupta an analyst, is evaluating Sharma Industries Ltd., (SIL). The company has maintained high growth rates in the face of strong competition in the last few years, maintaining high returns on capital. The fundamentals suggest that growth will continue to be high and given the size of the market and potential growth (as well as the strong brand name identification), growth seems sustainable for a longer period. [<Answer>](#)
- Mr. Gupta has the following information pertaining to SIL:
- Current Earnings / Dividends**
- Earning per share and Dividend per share in the FY 2007-08 are Rs.26.00 and Rs.6.5 respectively.
- Mr. Gupta has assumed the following inputs:**
- Inputs for the High Growth Period**
- Length of the high growth period is 5 years.
 - Expected growth rate in earnings is 22.00% (Based upon analyst projections).
 - Beta during high growth period is 1.20.
 - Risk free rate is 5.5%.
 - Market rate of return is 12%.
 - Dividend Payout Ratio is 25% (based on existing payout ratio).
- Inputs for the Transition Period**
- Length of the transition period is 5 years.
 - Growth rate in earnings will decline linearly from 22% in year 5 to 8% in year 10.
 - Payout ratio will increase from 25% to 60% over the same period in linear increments.

- Beta will drop from 1.20 to 1.00 over the same period in linear fashion.
- Risk free rate is 4.5%.
- Market rate of return is 10%.

You are **required** to

- Estimate the share price of SIL as on March 31, 2008. (6 marks)
- Estimate the share price of SIL using Three Stage Dividend Discount Model, if under the transition period only growth rate changes other things remaining same as high growth period. (5 marks)

4. Data for 7-trading days for Group A scrips of BSE is given below:

[<Answer>](#)

Day	Advances	Declines	Unchanged
1	96	96	7
2	140	53	6
3	120	75	4
4	79	115	5
5	102	88	9
6	99	95	5
7	90	102	7

Calculate:

- Short period A-D line. (3 marks)
- Long period A-D line. (5 marks)

Caselet

Read the caselet carefully and answer the following questions:

- With respect to the caselet, explain what is margin trading? Also explain with an example how it works. (5 marks) [<Answer>](#)
- As mentioned in the caselet 'most financial experts do not suggest that inexperienced investors try trading on the margin'. Should retail investors opt for margin trading? Discuss. (6 marks) [<Answer>](#)

Margin trading entails to buy new securities, get overdraft protection, access credit, or short sell securities. This is made possible by pledging the securities that you already own. Since margin trading strategies can be risky - especially the newly-popular day trading margin techniques which allow investors to leverage securities that they own for less than a day - most financial experts do not suggest that inexperienced investors try trading on the margin.

The growth in the number and size of margin accounts for stocks especially among day traders suggests that many people foolishly neglect these simple truths. From 1996 to 1999, margin debt rose nearly fivefold at online brokerage firms and doubled among NYSE member firms. During the decade of the 1990s, margin debt as a percentage of total consumer debt quadrupled from 4% to 16%. Yet many people do not understand that margin loans are not like other consumer loans.

Margin traders borrow from their brokers at rates ranging around 9% to 11% in order to buy stocks with the borrowed money. They think they can leverage those loans by using the proceeds to buy stocks whose price rises plus dividends yield greater returns. In euphoric markets those people may win, getting returns higher than the cost of the money. In gloomy markets they get crushed.

When the balance in your portfolio falls so that your margin loans are equal to about half or more of that amount, you have to put cash in to pay down that debt. If you don't have the cash, your broker will sell some of your shares with or without your cooperation. Add the interest expense and the trading costs to a reversal of Mr. Market's euphoria to count your losses, then multiply that by the number of overextended margin traders and you have the acute slope of a

downhill market before you.

The big margin traders might as well be high-rolling in Monaco on borrowed money. Look no further than the poster boy of marginized day trading to see the stupefying risk of this strategy. The most vocal proponent of this high-stakes game is Barry Hertz, the impresario of a company called Track Data Corporation. Its marketing pitch gleefully enthused that investing was easy, and Hertz advised his customers to day trade, using borrowed funds.

Hertz at least took his own advice to double speculate. So on Q day, his own brokers called him to say they needed over \$45 million to shore up his margin account. To do so, Hertz had to pledge over 50% of his shares of Track Data.

END OF CASELET

END OF SECTION B

Section C : Applied Theory (20 Marks)

- | |
|--|
| <ul style="list-style-type: none">• This section consists of questions with serial number 7 - 8 .• Answer all questions.• Marks are indicated against each question.• Do not spend more than 25 -30 minutes on Section C. |
|--|

7. Technical analysts confirm a price reaction by looking at the volume of shares traded. Discuss the principles to be borne in mind while studying the price-volume relationships. [<Answer>](#)
(10 marks)

8. There are several factors at work in every sector and every industry of an economy. The dynamic nature of every industry keeps the pulses of the companies operating in each sector racing. Industry analysis looks at all those factors that potentially change the fortunes of the company. With respect to this, discuss the key characteristics in an industry analysis. [<Answer>](#)
(10 marks)

END OF SECTION C

END OF QUESTION PAPER

Suggested Answers

Equity: Analysis & Valuation (CFA610): July 2008

Section A : Basic Concepts

- | Answer | Reason | |
|---------------|--|-------------------------------|
| 1. D | It is the secondary market which helps the shareholders to find buyers for trading, thus it creates liquidity in the capital markets. Therefore option (d) is not correct and that is the answer too. | < TOP > |
| 2. B | Market timing includes the following four components; Trends in interest rates, investor sentiments, the valuation of the market as a whole and technical state of the market. It does not include inflation rate. Hence option (b) is the answer. | < TOP > |

3. D The significance of a price pattern is a direct function of its size and depth. The longer a pattern takes to complete and greater the price fluctuations within the pattern, the more substantial the ensuing move is likely to be. Therefore the longer it takes for prices to move out of the pattern, the stronger is the base of the new trend. Statement (a) is true.
 A valid breakout can be confirmed if the penetration of the boundaries of a pattern is marked by a price change equal to or more than 3%. Statement (b) is true.
 The head and shoulders pattern occurs at the end of a bull market and is characterized by two smaller rallies flanking a higher rally just as the head lies in between two shoulders. Statement (c) is true.
 After a flag formation, prices move in the same direction as before. Statement (e) is true.
 A runaway gap occurs when prices are on a rapid uptrend or down trend and an exhaustion gaps represent gaps occurring before a trend ends, or gaps that precede the last leg of a bullish or a bearish trend. Statement (d) is not true. Hence option (d) is the answer. [< TOP >](#)
4. B Risk-free rate of return consists of real risk-free rate of interest + inflation rate. The slope of the SML represents the market risk premium and is the function of risk aversion of the investors. Thus, when the inflation rate falls or rises risk-free rate of return and required return on the average stock will decrease or increase. Hence, statement (II) is true. The slope of the SML or the market premium changes with the investor's perception of risk. Hence, statements (I) and (III) are not true and the answer is (b). [< TOP >](#)
5. B $EPS = ROE \times \text{Book value}$ [< TOP >](#)
 Where $ROE = ROA \times \text{Asset to equity ratio}$
 $EPS = 0.12 \times 3 \times 18 = \text{Rs.}6.48$
 Hence option (b) is the answer.
6. D Statement (II) is not true for pioneering stage, as the dividends become payable only at growth stage and high dividends can be expected only at stabilization stage.
 At the pioneering stage of an industry, most of the companies experience rapid growth in sales and earnings and it can be difficult for security analysts to identify the likely survivors.
 Hence, option (d) is the right choice. [< TOP >](#)
7. E These patterns typically develop slowly and over a long span of time. Other options are correct with respect to rounding tops. Therefore, option (e) is the correct answer. [< TOP >](#)
8. D $DPS = EPS \times \text{dividend pay-out ratio}$ [< TOP >](#)
 Current year $DPS = 24 \times 0.28 = 6.72$
 Previous year $DPS = 18.50 \times 0.28 = 5.18$
 Growth rate $= (6.72 - 5.18)/5.18 = 29.73\%$

$$P_0 = \frac{D_0(1+g)}{ke-g} = \frac{6.72(1.2973)}{0.35-0.2973} = \text{Rs.}165.41$$
9. B Bull dog bonds are foreign bonds issued by foreign companies in the domestic market of UK in the domestic currency i.e. in pound sterling. [< TOP >](#)
10. D In price-driven market, the dealer has the risk of being picked off by not updating the quotes. In order driven market, there is a danger in placing the order due to the absence of well developed markets. Therefore, option (d) is not true. All other statements are correct. [< TOP >](#)
11. B Margin trading means to borrow money from a broker (similar to a loan) to purchase stock. The investor can take position in the market by paying an initial margin of 50 per cent (your own money), while the broker could finance the balance 50 per cent. [< TOP >](#)
 Mr. Suman is holding 100 Reliance Energy shares at Rs.500 each, where his investment was only Rs.25000 and when the stock price fell to Rs.410, the balance in his account will be $(25000 - 9000) \text{ Rs.}16000$. So the maintenance margin will be $(\text{equity account}/\text{market value of holding} \times 100)$ i.e. $16000/41000 \times 100 = 39.02\%$.

12. D $\frac{0.10 \times 0.25 \times 1.05}{0.12 - 0.05} = 0.375$. [< TOP >](#)
13. C The following are assumed in the Capital Assets Pricing Model (CAPM): [< TOP >](#)
- An investor can buy or sell assets in terms of any units desired.
 - Transaction costs are negligible.
 - Investors are generally risk averse in nature.
 - Investment horizon is generally considered as one period only.
 - There are no taxes.
- Hence, the alternative (c) is the answer.
14. A In the security market line (SML) the y-intercept is the risk free rate of return (r_f) and the slope is the difference between the rate of return on the market index and the risk free rate of return ($r_m - r_f$). If the risk free rate of return increases then the y-intercept increases; so the SML shifts up. If the investors become more risk averse then ($r_m - r_f$) increases i.e., the slope of SML increases. Hence alternative (a) is the answer. [< TOP >](#)
15. C Presence of Numerous or equally balanced competitors ensures high competition in an industry. Slow growth rate and high fixed or storage cost increase the rivalry among industry players. Lack of differentiation or switching cost also enhances the competition in a particular industry. Hence, (I) and (III) are correct whereas (II) and (IV) are wrong. Therefore, option (c) is the correct answer. [< TOP >](#)
16. C $\frac{D_0 [(1 + g_n) + H(g_a - g_n)]}{r - g_n}$ [< TOP >](#)
- According to H-model $P_0 =$
- $$\frac{D_0 (1 + g_n)}{r - g_n} + \frac{D_0 H (g_a - g_n)}{r - g_n}$$
- = Value based on normal growth rate + Premium due to abnormal growth rate
- $$\frac{D_0 H (g_a - g_n)}{r - g_n} = \frac{2.00 \times 2.5 \times (0.10 - 0.05)}{0.12 - 0.05} = \frac{5 \times 0.05}{0.07} = \text{Rs.} 3.57.$$
17. C Revised value of base year market capitalization is [< TOP >](#)
- $$= 269.16 + \frac{1240}{(287190.47 / 269.16)} = \text{Rs.} 270.32 \text{ Crore.}$$
18. C EVA of the firm according to the residual income method: [< TOP >](#)
- $$\text{EVA} = \left[\frac{\text{Net profit}}{\text{Total Capital}} - \text{WACC} \right] \text{Total Capital}$$
- $$\text{EVA} = \left[\frac{\text{Rs.} 30 \text{ lakh}}{\text{Rs.} 120 \text{ lakh}} - 0.1249 \right] \times \text{Rs.} 120 \text{ lakh} = \text{Rs.} 15.01 \text{ lakh} \approx \text{Rs.} 15 \text{ lakh.}$$
19. C Total market value of shares of the company = $9 \times \text{Rs.} 16 \text{ lakh} = \text{Rs.} 144 \text{ lakh}$ [< TOP >](#)
- Let the percentage of shares bought by the company is x%
- Funds required = $0.01x \times \text{Rs.} 144 \text{ lakh} \times 1.1 = \text{Rs.} 77.616 \text{ lakh}$
- $$0.01x = 77.616 / 158.4 = 0.49$$
- $$x = 0.49 / 0.01 = 49\%.$$

20. D New highs are reached after a resistance line is penetrated and new lows follow [< TOP >](#)
penetration of a support line. Statement (I) is true.
Prices are said to remain in a congestion zone as long as they fluctuate in narrow ranges within a support and resistance level. Statement (II) is true.
Prices penetrate support (resistance) level generally after slowing down from a previous low (high) and hovering around a level for sometime. Statement (III) is not true.
Hence (d) is the answer.
21. E Elliot wave theory was originally applied to Dow Jones industrial averages. The [< TOP >](#)
complete cycle has 8 waves – five up and three down. 3rd wave is always the longest and the most dynamic in five advance waves and Wave C confirms the end of uptrend. Hence both the statements (III) and (IV) are incorrect.
22. C $RS = \frac{(275.60 + 270.00) / 2}{(272.00 + 268.00) / 2} = \frac{272.80}{270.00} = 1.01$ [< TOP >](#)
 $RSI = 100 - \frac{100}{1 + 1.01} = 100 - 49.75 = 50.25$
Therefore, option (c) is the correct answer.
23. B Value of equity = Value of firm – Value of debt [< TOP >](#)
= Rs.170 lakh – Rs.72 lakh = Rs.98 lakh
According to the constant growth valuation model
 $V_0 = (FCFE)_1 / (K_e - g)$
Where $FCFE_1 = FCFE_0 (1 + g)$
 $V_0 = FCFE_0 \times 1.075 / (0.16 - 0.075)$
 $V_0 = FCFE_0 \times 1.075 / 0.085 = \text{Rs.98 lakh}$
 $FCFE_0 \times 1.075 = \text{Rs.8.33 lakh.}$
 $FCFE_0 = 7.7488 \text{ lakh.}$
24. E ESOPs are defined contribution pension plan (stock bonus and/or money purchase) [< TOP >](#)
designed primarily in the stock of the employer firm. ESOPs have become popular as a financing strategy to corporate. They have become attractive for corporate employee benefits, financing buyouts, divestitures and repurchasing of outstanding stocks. ESOPs are used for all the given purposes.
25. C The cash flow LBOs says that equity investors receive the return through the [< TOP >](#)
replacement of debt capital with equity and also through any increase in the total market value of company. Other two options are the characteristics of bust-up LBOs. Thus, option (c) is the answer.
26. A In a spin-off, an existing division is vested in a new company formed for running over [< TOP >](#)
the operations of the division in future. Further, in the new company the shareholding pattern mirrors that of existing company.
27. C An order that allows the price to be specified while entering the order into the system [< TOP >](#)
is said to be Limit Price Order while an order to buy or sell securities at the best price obtainable at the time of entering the order is Market Price Order. Hence option (I) and option (III) are said to be false. Thus option (c) is the correct answer. Stop loss order allows the trading member to place an order that gets activated only when the market price of the relevant security reaches a threshold limit. Hence, statement (II) is true with regard to stop loss price order.
28. B MVA serves as a measure of a firm's external performance and it can be computed by [< TOP >](#)
discounting the EVA of each year by the WACC. Some advantages of EVA are that it is primarily used for evaluating the performance of management. It serves as a proxy for measuring a stock's performance and it can be applied to capital budgeting problems like NPV. Therefore statement (b) is not true and is the answer.

29. A Correlation coefficient between two securities measures the relationship between [<TOP>](#) returns of the securities. If the coefficient is positive, it indicates the returns on the securities move in the same direction and if it is negative, it indicates that the returns on the securities move in the opposite direction. The correlation coefficient of return on a stock with the returns on the market is negative, indicates that the returns on the stock and the market move in the opposite direction. Hence, (a) is correct.
- Risk is measured by variance or beta but not by correlation coefficient. Hence, the statement (b) is not correct. As the correlation coefficient shows the relationship of movement of returns but does not quantify returns on the securities, statement (c) is not correct. Whether a stock is earning above normal, normal or below normal return can be found out by comparing the required rate of return with the expected or average rate of return. Hence, the statements (d) and (e) are not correct.
30. D According to the DDM model $P_0 = D_1 / (K_e - g)$ and dividend yield is dividend earned [<TOP>](#) on the market price of the stock. i.e the difference between required rate of return and growth rate in the earnings of a stock $(K_e - g)$ is equal to D_1 / P_0 .

Section B: Problems

1.a. Market

R_M	P_i	$R_M P_i$	$R_M - E(R_M)$	$[R_M - E(R_M)]^2$	$[R_M - E(R_M)]^2 \times P_i$
12	0.15	1.8	11.45	131.1	19.67
10.5	0.25	2.625	9.95	99	24.75
-12.5	0.35	-4.375	-13.05	170.3	59.61
2.0	0.25	0.5	1.45	2.103	0.526
		0.55			104.56

Expected Return on market = 0.55%

$\text{Var}_M = 104.56$

$\sigma_M = 10.22\%$

Stock A

R_A	P_i	$R_A P_i$	$R_A - E(R_A)$	$R_M - E(R_M)$	$[R_A - E(R_A)]^2$	$[R_A - E(R_A)]^2 \times P_i$	$\frac{[R_A - E(R_A)]}{[R_M - E(R_M)]} \times P_i$
20.5	0.15	3.075	15.675	11.45	245.71	36.86	26.922
9	0.25	2.25	4.175	9.95	17.431	4.358	10.385
-5	0.35	-1.75	-9.825	-13.05	96.531	33.79	44.876
5	0.25	1.25	0.175	1.45	0.0306	0.008	0.0634
		4.825				75.016	82.246

Expected return on stock A = $\Sigma R_A P_i = 4.825\%$

$\text{Var}_A = 75.01(\%)^2$

$\sigma_A = 8.66\%$

Stock B

R_B	P_i	$R_B P_i$	$[R_B - E(R_B)]$	$[R_M - E(R_M)]$	$[R_B - E(R_B)]^2$	$[R_B - E(R_B)]^2 \times P_i$	$\frac{[R_B - E(R_B)]}{[R_M - E(R_M)]} \times P_i$
25.5	0.15	3.825	16.225	11.45	263.251	39.488	27.866
7.5	0.25	1.875	-1.775	9.95	3.151	0.788	-4.415
4.5	0.35	1.575	-4.775	-13.05	22.801	7.980	21.810
8.0	0.25	2	-1.275	1.45	1.626	0.406	-0.462
		9.275				48.662	44.80

Expected Return on Stock B = $\Sigma R_B P_i = 9.275\%$

$$\text{Var}_B = 48.662(\%)^2$$

$$\sigma_B = 6.976\%$$

$$\text{Beta}_A = \frac{\text{Cov}_{AM}}{\text{Var}_M} = \frac{\frac{\sum [(R_A - E(R_A))][R_M - E(R_M)] P_i}{\text{Var}_M}}{\text{Var}_M} = \frac{82.246}{104.56} = 0.787$$

$$\text{Beta}_B = \frac{\text{Cov}_{BM}}{\text{Var}_M} = \frac{44.80}{104.56} = 0.428$$

$$\text{Unsystematic Risk} = \text{Total Risk} - \text{systematic risk} = \sigma^2 - \beta^2 \sigma_M^2$$

$$\text{Stock A} = 75.01 - (0.787)^2 \times 104.56 = 10.25 \%$$

$$\text{Stock B} = 48.662 - (0.428)^2 \times 104.56 = 29.51 \%$$

$$\begin{aligned} \text{b. } R_A &= R_f + \beta_A (R_M - R_f) \\ &= 5.5 + 0.787 (0.55 - 5.5) \\ &= 1.604\% \end{aligned}$$

$$\begin{aligned} \alpha_A &= E(R_A) - \text{Required return} \\ &= 4.825 - 1.604 = 3.221\% \end{aligned}$$

As alpha is positive, Stock A is under valued

$$\begin{aligned} R_B &= 5.5 + 0.428 (0.55 - 5.5) \\ &= 3.381\% \end{aligned}$$

$$\alpha_B = 9.275 - 3.381 = 5.894\%$$

As alpha is positive, Stock B is also undervalued.

$$\begin{aligned} 2. \quad \text{a. Break-even period} &= \frac{\text{Conversion premium}}{\text{Interest Income} - \text{Dividends}} = \frac{1016 - 226 \times 4}{110 - (4 \times 4)} \\ &= \frac{112}{110 - 16} = \frac{112}{94} = 1.19 \text{ years} \end{aligned}$$

$$\text{b. Payback period} = \frac{\% \text{Premium} / (1 + \% \text{premium})}{\left[\text{Current yield} - \frac{\text{Dividend yield}}{1 + \% \text{premium}} \right]}$$

$$\begin{aligned} \text{Premium over conversion value} &= \text{Current market price of the bond} \\ &\quad - (\text{Current share price} \times \text{Number of shares}) \\ &= 1016 - 226 \times 4 = \text{Rs. } 112 \end{aligned}$$

$$\% \text{ Premium} = \frac{112}{(1016 - 112)} \times 100 = \frac{112}{904} \times 100 = 12.39\%$$

On substituting the values,

$$\begin{aligned} \text{Payback period} &= \frac{\frac{0.1239 / (1 + 0.1239)}{\left[\frac{110}{1016} - \frac{4 / 226}{1 + 0.1239} \right]}}{\frac{0.1239 / 1.1239}{(0.108 - 0.016)}} = 1.198 \approx 1.2 \text{ years.} \end{aligned}$$

- c. Under traditional valuation method, the recovery of premium is called break-even period which emphasizes that the conversion right should be exercised after this period.

The payback period is the concept used in capital budgeting. It indicates the period in which the additional amount paid as premium is recovered.

In essence both try to arrive at the same period, albeit through different approaches.

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Year	EPS	Growth rate	DP	DPS	Beta	Rf	Rm	Ke (%)	Discount rate	PV	
0	26		0.25	6.50							
1	31.72	22%	0.25	7.93	1.2	5.5	12%	13.3	1.133	7.00	
2	38.70	22%	0.25	9.67	1.2	5.5	12%	13.3	1.284	7.53	
3	47.21	22%	0.25	11.80	1.2	5.5	12%	13.3	1.454	8.12	
4	57.60	22%	0.25	14.40	1.2	5.5	12%	13.3	1.648	8.74	
5	70.27	22%	0.25	17.57	1.2	5.5	12%	13.3	1.867	9.41	
6	83.76	19.20%	0.32	26.80	1.16	4.5	10%	10.88	2.070	12.95	
7	97.50	16.40%	0.39	38.02	1.12	4.5	10%	10.66	2.291	16.60	
8	110.76	13.60%	0.46	50.95	1.08	4.5	10%	10.44	2.530	20.14	
9	122.72	10.80%	0.53	65.04	1.04	4.5	10%	10.22	2.789	23.32	113.81
10	132.54	8.00%	0.6	79.52	1	4.5	10%	10	3.067	25.93	1296.50 (Terminal value)
Share price as on 31 st March 2008											Rs.1410.31

b.

Year	Growth rate	DPS	Discount rate	PV	
0		6.50			
1	22	7.93	1.133	7.00	
2	22	9.67	1.284	7.54	
3	22	11.80	1.454	8.12	
4	22	14.40	1.648	8.74	
5	22	17.57	1.867	9.41	
6	19.20	20.94	2.115	9.90	
7	16.40	24.38	2.397	10.17	
8	13.60	27.69	2.715	10.20	
9	10.80	30.68	3.077	9.97	81.05
10	8.00	33.14	3.486	9.51	179.43 (Terminal value)
Share price as on 31 st March 2008					Rs.260.48

4.i. For short-period observation, A/D lines do not account for unchanged stocks.

Day	Issues traded	Advance (A)	Declines (B)	Net (A – D)	Cumulative A – D
1	199	96	96	0	0
2	199	140	53	87	87
3	199	120	75	45	132
4	199	79	115	–36	96
5	199	102	88	14	110
6	199	99	95	4	114
7	199	90	102	–12	102

ii. Long-period A – D line:

For long run observations, the A – D line is drawn after considering the number of issues also whose prices

remain unaltered. The A – D line is drawn by cumulative the value of $\sqrt{\frac{A}{U} - \frac{D}{U}}$
where,

A = No. of issues whose prices are advancing

D = No. of issues whose prices are declining

U = No. of stocks whose prices remains unaltered.

Day	Issues traded	Advance	Declines	Unchanged	$\frac{(2)}{(4)}$ x 100	$\frac{(3)}{(4)}$ x 100	(5 – 6)	$\sqrt{7}$	Cumulative A – D
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(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	199	96	96	7	1371.43	1371.43	0	0	0
2	199	140	53	6	2333.33	883.33	1450	38.07	38.07
3	199	120	75	4	3000.00	1875.00	1125	33.54	71.61
4	199	79	115	5	1580.00	2300.00	-720	-26.83	44.78
5	199	102	88	9	1133.33	977.78	155.55	12.47	57.25
6	199	99	95	5	1980.00	1900	80.00	8.94	66.19
7	199	90	102	7	1285.71	1457.14	-171.43	-13.09	53.10

5. Margin trading is a high-risk strategy that allows you to buy more stock than you would be able to normally and can yield a huge profit if executed correctly.

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Buying on margin means to borrow money from a broker (similar to a loan) to purchase stock.

The investor can take position in the market by paying an initial margin of 50 per cent (your own money), while the broker could finance the balance 50 per cent.

The broker can lend from his own resources or can borrow from banks, non-banking finance companies and other qualified lenders such as insurance companies. However, the broker can only borrow up to five times his net worth. The broker cannot use the funds from other clients or individuals. Sebi has stipulated that only corporate brokers with a net worth of more than Rs 3 crore (Rs 30 million) can carry out margin trading on behalf of their clients.

How does margin trading work?

Opening a separate account: To trade on margin, one needs to open a margin account. This is different from the regular cash account in which you trade using the money in the account. The broker will be required to obtain your signature to open this margin account. The margin account may be part of your standard account opening agreement or may be a completely separate agreement.

Margin trading process:

Say you wish to buy 500 Reliance Industries shares but do not have the entire finance upfront. You could do the trade through margin trading, wherein you would bring in 50 per cent as the initial margin (through your own funds) and the broker would provide the balance 50 per cent funds.

There are some key issues that have to be kept in mind while opting for margin trading.

- First, when you sell the stock in a margin account, the proceeds go to your broker against the repayment of the loan, until it is fully paid.

The stocks are kept as collateral for the loan taken and remain in the broker's possession.

- Secondly, the investor has to keep a minimum amount of equity (as maintenance margin) in the margin account, which can range from 25-40 per cent.

This balance must be maintained before the broker forces you to deposit more funds or sell stock to pay off your loan.

Note: If the value of the security or stock falls and the margin falls below 40 per cent, then the amount (as margin) will have to be increased again.

A broker will make a 'margin call' if one or more of the securities you have bought (with borrowed money) decreases in value past this point. The investor will then have to pay the margin on a T+1 basis, i.e., the cheque would have to be paid to the broker the next day. In case the margin falls below 30 per cent, then the broker -- without intimating you - could also sell the stock in the market. In the case of higher profits, the interest on the loan taken will have to be paid. The interest charges are applied to your account unless you decide to make payments. These interest charges in current market conditions are high and differ from broker to broker. Over time, your debt level increases as interest charges accrue against you.

6. There are clear benefits from margin trading, offering you leverage for your trade. If the scrip you have bought moves up, one can make handsome gains.

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On the flip side, a fall in prices would mean shoring up the maintenance margin (bringing in more money) or liquidating the stock. Further, interest has to be paid on the sums borrowed. Hence, one could actually stand to lose more money than originally invested.

Margin trading would benefit the high net worth individuals more than retail investors.

The retail investor must keep from jumping into margin trading immediately due to the following factors:

- Any financial and trading system in Indian market conditions will need some time to settle down. There will be hiccups and possibly changes in the margin trading system, as required.

Margin trading is a high-risk strategy. You stand to make higher profits, but might also lose heavily, if the

market conditions move against you.

Indulge in margin trading only if you have 'risk capital'. Risk capital is surplus money set aside, which the investor can afford to lose.

Buying on margin should be used for short-term investments. The longer you hold an investment, the greater a return you need, to break even. If you hold an investment on margin for a long period of time, the odds that you will make a profit are stacked against you.

Section C: Applied Theory

7. The following, in brief, are the principles to be borne in mind while studying Price-Volume relationships: [< TOP >](#)

- i. A price rise that is accompanied by expanding volume is a normal market tendency and therefore is not indicative of any potential trend reversal.
- ii. A new high reached with a volume that is actually diminishing is a warning to a reversal in price.
- iii. A rally which reaches a new high would also be accompanied by a volume that is higher than that obtained at the preceding peak. If volumes obtained at a new high are lower, a trend reversal is indicated.
- iv. After a slow expansion over a period, sometimes both prices and volume work into an exponential rise. This is indicative of heavy off-loading by bulls and is called a 'speculative blow off' and marks the end of the bull market. Price and volumes both fall sharply after this development.
- v. When prices recover after a bearish phase and subsequently react to a level equal to or slightly above the previous low, if the volume accompanying such reaction is lower than that obtained at the previous low, a bullish trend is indicated. Lower volumes accompanying such reactions are indicative of the weakness of the reaction.
- vi. A reversal in trend indicated by a downside breakout from a price pattern, trendline or moving average, can be acted upon if accompanied by heavy volume, which confirms the bearish sign.
- vii. Termination of a bear market is often signaled by a 'selling climax'. A selling climax occurs when prices fall for a considerable time at an accelerated pace and are accompanied by expanding volume. Price may be expected to rise subsequently.
- viii. An accumulation in the course of a bearish market, accompanied by high volume, indicates persistent effort to push up prices, and would spark a bullish phase. Similarly, a distribution accompanied by increased volume is a bearish factor. However, where volumes do not increase at an accumulation or distribution, the indication is that there is only a consolidation of the prevailing trend.

8. Key Characteristics In An Industry Analysis [< TOP >](#)

The most important of the characteristics that are to be evaluated in an Industry Analysis can be enumerated as given below:

1. Past sales and earnings performance.
2. Permanence of the industry.
3. The attitude of the government towards the industry.
4. Labor conditions within the industry.
5. The competitive conditions as reflected by the existence of the entry barriers and
6. The stock prices of the firms in the industry relative to their earnings.

Past Sales and Earnings Performance

For an analyst, the past sales and earnings performance of the firm form a crucial input in forecasting future trends. This is not to say that the firm is going to repeat the same performance again. Rather, the analyst is more interested in examining the contribution of the various factors in the past so that the relevance of these factors individually and relatively can be properly evaluated under present conditions.

In any firm, sales and the earnings play an important role. These variables will exhibit a degree of consistency only when the firm has weathered a variety of economic conditions. The analyst from the observation of these variables will be able to judge the stability of the

performance in terms of sales and earnings as well as the growth rates. Another crucial factor is that of the relationship between the sales and the fixed costs. The more the fixed costs, the higher will be the break even point and higher will be the sales volume to be achieved.

Permanence

By permanence, we understand the products and the technology of a particular industry not becoming obsolete in a short span of time. If the industry is not permanent, then investing in that industry altogether becomes a losing proposition. In some of the cases a product with additional features manufactured by employing superior technology makes the existing product totally irrelevant or at least results in the manufacturing process becoming a commercially enviable proposition.

In this age of rapid technological developments, this factor plays a crucial role in Industry Analysis. The Government's role is also an important factor affecting the permanence of the industry.

The Attitude of the Government towards the Industry

It is imperative for an Analyst that he should be well aware of the various Government policies and regulations with reference to an industry in which he is going to invest. The government policies like deregulating an industry by allowing foreign investment, imposing high tariffs on imports and restrictive legislation have a bearing on their performance. Some of the legal restrictions result in the profits being very low for a particular industry. Thus an analyst, for that matter an investor also should be thorough with various government regulations and their implications and should be able to predict, at least broadly, the changes likely to take place in the regulations in the near future.

Labor Conditions

This is an important factor to be considered in industries which are labor intensive. An analyst should examine the various provisions of the labor laws and also go into the possible reasons that may halt the production process and its fallout on the profits of the industry. In case of a prolonged strike, a labor intensive firm will not only lose its customers and goodwill but also may not be able to cover its fixed costs in certain cases.

Competitive Conditions

While analyzing this situation, the three general types of barriers that an analyst should concentrate on, are

1. Existence of product differentiation
2. Absolute cost advantages and
3. Advantages rising from economies of scale.

The existence of the first barrier assures that a new entrant will not be able to charge as much as the existing firms. Also he has to spend large amounts of money on advertising to capture an acceptable share of the market as this situation is usually found in cases where the customers exhibit a high degree of brand loyalty. By absolute cost advantages, we understand that the existing firms are capable of producing and distributing the products at lower costs than the new entrants irrespective of the volume produced. As a result, they enjoy wider profit margins. This may be due to the fact that the existing firms may have exclusive patents, own the resources or superior management skills that are not available to the new entrants.

Economies of scale are usually realized when the production levels are quite high. A new entrant in this case also has to garner a significant market share so that he can avail the benefits from economies of scale. If he fails to do so, he will be able to compete with the prices offered by the existing players.

Industry Share Prices Relative to its Earnings

In addition to the various factors we have been looking at, the analyst also has to look at the present share prices. In this case under priced share would be the best bet. Also he should examine the fact that the share prices are not high due to the overzealous nature of the investors to acquire the shares of the firms in a new industry. Usually the shares of these companies experience high fluctuations depending on the crowd behavior.

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