Question paper
Introduction to Security Analysis (MB3G1F) : October 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.

<Answer>

1. Which of the following purpose is **not** served by an index?

(a) It is helpful in evaluating the portfolio risk-return analysis
(b) It serves as a barometer of the changes in trading patterns in the stock market
(c) The growth in the primary market can be measured through the movement of indices
(d) It is useful indicator of a country's economic health
(e) Indices can be calculated industry-wise to know their trend pattern and also for comparative purposes across the industries and with the market indices.

<Answer>

2. Which of the following statements are **true** with respect to Beta?

I. Beta is the slope of the Security Market Line.
II. Beta measures the non-diversifiable risk.
III. Beta indicates the manner in which a security's return changes systematically with changes in the market's return.
IV. Beta greater than one is referred to as an aggressive security.

(a) Both (I) and (III) above
(b) Both (II) and (III) above
(c) (I), (III) and (IV) above
(d) (II), (III) and (IV) above
(e) All (I), (II), (III) and (IV) above.

<Answer>

3. In a portfolio consisting of two securities in which funds have been invested in equal proportions, one of the securities is risk-free security and the other one is risky security. The standard deviation of the portfolio will be equal to

(a) The standard deviation of the risky security
(b) Half of the standard deviation of the risky security
(c) One-fourth of the standard deviation of the risky security
(d) Twice the standard deviation of the risky security
(e) Zero.

<Answer>

4. Consider the following data about two securities A and B:

Particulars Particulars	Security A	Security B
Expected Return (%)	12	13
Standard deviation of returns (%)	21	29
Beta	1.10	1.20

Variance of returns on the market index is 400 $(\%)^2$. The correlation coefficient between the returns on securities A and B is 0.94.

The systematic risk of a portfolio consisting of these two securities in equal proportions is

(a) 24.63$(\%)^2$
(b) 460.00$(\%)^2$
(c) 529.00$(\%)^2$
(d) 606.73$(\%)^2$
(e) 802.40$(\%)^2$.

<Answer>

5. Anirudh Ltd., issues right shares which increases the market value of the shares of the company by Rs.150 crore. The aggregate market value of all the shares included in the index before the right issue made is Rs.2,500 crore. If, the Base year average for calculating the index number for a period starting from the time the right issue is made till the next base year change becomes necessary is Rs.1,010 crore, what is the existing base year average?

(a) Rs.1,070.60 crore
(b) Rs.1,005.94 crore
(c) Rs. 952.83 crore
(d) Rs. 949.40 crore
(e) Rs. 823.23 crore.

<Answer>

6. Which of the following is **true**, if entry barriers are low and exit barriers are high in the industry?

(a) Returns are low and stable
(b) Returns are high and stable
(c) Returns are low and risky
(d) Returns are high and risky
(e) Returns may vary depending on industry selected.

<Answer>

7. Change in which of the following accounting policies will **not** affect the profit figures reported between two time periods?

(a) Treatment of R & D expenditure
(b) Treatment of gratuity liability
(c) Valuation of Inventories
(d) Treatment of depreciation provisions
(e) Revaluation of financial investment for treasury operations.

<Answer>

8. A convertible bond with a face value of Rs.1,000 had been issued at Rs.1,300 with a coupon rate of 14%. The conversion rate is 20 shares per bond. The current market price of the bond is Rs.1,650 and that of stock is Rs.66. The premium over conversion value is

(a) 8.33%
(b) 20.00%
(c) 25.00%
(d) 30.00%
(e) 41.67%.

<Answer>

9. Which of the following statements is/are **not true** regarding the Price/Sales (P/S) ratio?

I. P/S ratio is useful for valuing companies even with no dividends at all.
II. P/S ratio can be positive or negative.
III. Firms with low profit margins and high P/S ratio are undervalued.
IV. P/S ratio is not influenced by accounting methods.

(a) Only (I) above
(b) Only (II) above
(c) Both (I) and (III) above
(d) Both (II) and (III) above
(e) (II), (III) and (IV) above.

<Answer>

10. Which of the following statements is **false** with respect to the two-stage dividend discount model?

(a) It is difficult to specify the supernormal growth period with precision
(b) The model suffers with the limitation of the change of high supernormal growth to a lower stable growth rate at the end of the supernormal growth period
(c) The terminal price calculated in this model is derived from Gordon model
(d) This model is best suited to those firms which have a high growth rate in the beginning and a gradual decline in the growth rate over a period of time
(e) This model assumes high-growth period and stable-growth period for valuing a stock.

<Answer>

11. The current share price of Excel Ltd., is Rs.78 per share and the dividend is expected to be Rs.5.80. The duration of this stock will be

(a) 11.50 years
(b) 12.22 years
(c) 13.45 years
(d) 20.55 years
(e) 22.22 years.

<Answer>

12. Which of the following statements is a property of realized yield?

(a) For bonds with longer term to maturity, realized yield will be higher than the reinvestment rate
(b) If the reinvestment rate is greater than realized yield, the realized yield will be lesser than YTM
(c) Even if the coupons are reinvested at a rate different from the YTM, the realized yield will be equal to promised YTM
(d) If the reinvestment rate is greater than realized yield, the realized yield will be equal to YTM
(e) For bonds with shorter term to maturity, realized yield will be closer to the YTM.

<Answer>

13. IDBI came out with an issue of deep discount bonds. Each bond having a face value of Rs.1,25,000 was issued at a deep discounted price of Rs.480.50 with a maturity period of 15 years. The corporate tax rate applicable is 25%. If the indexed cost of acquisition is 25%, then the post-tax yield to maturity of the bond is

(a) 42.47%
(b) 35.21%
(c) 29.67%
(d) 11.58%
(e) 5.37%.

<Answer>

14. Which of the following would be **true** evidence against the semi-strong form of market efficient theory?

(a) No investor can make superior profits by purchasing or selling stock after the announcement of unexpected rise in dividend
(b) Trend analysis is worthless in determining stock prices
(c) Positive abnormal returns can be expected from low P/E stocks
(d) Mutual fund managers do not persistently make superior returns
(e) Investors cannot make superior profits by changing his portfolio according to change in the interest rates.

<Answer>

15. An index model regression applied to past monthly returns in ACC stock price produces the following estimates, which are believed to be stable over time:

$r_{ACC} = 0.15\% + 1.2\ r_M$

If the return on market index subsequently rises by 8% and return on ACC's stock rises by 7%, the abnormal return earned on ACC's stock will be

(a) –2.75%
(b) –1.65%
(c) 0.55%
(d) 1.65%
(e) 2.75%.

<Answer>

16. Which of the following techniques is used to identify the trend reversal before it takes place?

(a) Volume of the market
(b) Momentum
(c) Simple moving average
(d) Breadth of the market
(e) Weighted moving average.

<Answer>

17. Which of the following statements are **not true** with respect to Triangles of Technical Analysis?

I. In Symmetrical Triangle, volumes increase as the triangle narrows towards the apex.
II. A Symmetrical Triangle cannot be said to be in a continuation pattern or a reversal pattern before the breakout.
III. With Right angled Triangle, the resistance or support level cannot be determined.
IV. In Right angled Triangle, the direction of breakout can be identified before the actual breakout.

(a) Both (I) and (III) above
(b) Both (II) and (IV) above
(c) Both (III) and (IV) above
(d) (I), (II) and (III) above
(e) All (I), (II), (III) and (IV) above.

<Answer>

18. Which of the following statements is/are **true** in relation to futures contract?

I. The difference between the two prices of the futures contract is called as spread.
II. The inter commodity futures spreads require lower margin than single futures contract.
III. Basis is equal to futures price minus current cash price.

IV. Basis is higher for futures contracts with longer maturity.

(a) Only (I) above
(b) Both (I) and (II) above
(c) Both (III) and (IV) above
(d) (I), (II) and (IV) above
(e) (I), (III) and (IV) above.

<Answer>

19. Margin in a futures contract depends on the price volatility of the underlying asset. The margin requirement can be estimated by calculating:

I. Average daily absolute change in the value of futures contract.
II. Average number of transactions of the futures contract.
III. Standard deviation of the absolute change in the value of futures contract.
IV. Coefficient of variation of the absolute change in the value of futures contract.

(a) Both (I) and (II) above
(b) Both (I) and (III) above
(c) Both (III) and (IV) above
(d) (I), (III) and (IV) above
(e) (II), (III) and (IV) above.

<Answer>

20. The shares of Supreme Industries Ltd., are trading at Rs.370. Put options with a strike price of Rs.380 are priced at Rs.16. The intrinsic value and time value of the options respectively are

(a) Rs. 6, Rs.10
(b) Rs. 8, Rs. 8
(c) Rs. 8, Rs.16
(d) Rs.10, Rs. 6
(e) Rs.16, Rs.12.

<Answer>

21. Which of the following options is/are **not** in-the-money?

	Type of option	Strike Price (Rs.)	Market Price (Rs.)
A	Call	185	179
B	Call	210	225
C	Call	315	315
D	Put	98	110
E	Put	162	148

(a) Only C above
(b) Both A and E above
(c) Both B and D above
(d) Both B and E above
(e) A, C and D above.

<Answer>

22. Stock of Zenith Ltd. has conversion parity price of Rs.38.50. If the number of shares on conversion per warrant is 28, the bond price is

(a) Rs.1,220.50
(b) Rs.1,165.50
(c) Rs.1,105.00
(d) Rs.1,078.00
(e) Rs. 998.00.

<Answer>

23. Which of the following statements is **not true** with respect to interest rate theories?

(a) According to Liquidity Preference Theory, spenders keep a proportion of their assets as cash balances for maintaining liquidity
(b) According to this Pure Expectations Theory, the current term structure of interest rates is determined by the consensus forecast of future interest rates
(c) According to the Loanable Funds Theory, interest rates in different sectors in the economy can be predicted
(d) According to the Liquidity Premium Theory, the investors are not indifferent to risk and they charge higher rates than the expected future rates, if the maturity of the instrument increases
(e) According to the Preferred Habitat Theory, it is a pre-requisite that the liquidity premium should increase at a uniform rate with maturity.

<Answer>

24. Bond A has a 12% coupon and Bond B has an 8% coupon. Both bonds have a 10% YTM and five years to maturity. Which of the following statements is most **correct**?

I. If market interest rates were to increase, Bond B would have the greatest decrease in price.
II. If market interest rates remain unchanged, Bond A's price will be higher one year from now than it is today.
III. If market interest rates were to decrease, Bond A would have the greatest increase in price.

(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.

<Answer>

25. Which of the following principles is/are **true** with respect to Real Estate Appraisal?

I. According to the Principle of Substitution, a rational owner will try to gain the maximum out of the resources he has.
II. According to the Principle of Change, price is function of demand and supply and value of property fluctuates with price.
III. According to the Principle of Marginal Productivity, the value of any factor of production or component of a property can add to or lower the value of the asset.

(a) Only (I) above
(b) Only (II) above
(c) Only (III) above
(d) Both (I) and (II) above
(e) Both (II) and (III) above.

<Answer>

26. Which of the following statements is **true** regarding mutual funds?

(a) The shares of close-ended funds are redeemable at their NAV
(b) Open-ended funds can sell unlimited number of units
(c) The fund units are sold to the public at the NAV
(d) Real estate fund is an open-ended fund
(e) Specialized funds carry low risk.

<Answer>

27. Consider the following data of JM Mutual Fund (Income plan):

Particulars	Rs. in crore
Value of investments	1,737.10
Receivables	130.30
Accrued income	43.40
Other current assets	521.13
Liabilities	390.85
Accrued expenses	86.86

If present NAV of the mutual fund is Rs.12.37 per unit, then number of outstanding units will be

(a) 147.45 crore
(b) 157.98 crore
(c) 172.02 crore
(d) 221.17 crore
(e) 235.22 crore.

<Answer>

28. Which of the following statements is **true** with respect to the industry life cycle?

(a) In the pioneering stage few companies continue to get stronger, both in share of the market and financially
(b) In the stabilization stage, many firms are lured into the industry as a result of profit opportunities
(c) The pioneering stage is typified by rapid growth in demand for the output of the industry
(d) In the expansion stage, as a large number of firms attempt to capture their share of the market, there arises a high business mortality rate
(e) The stabilization phase is typified by reduction in competition between firms.

<Answer>

29. Who among the following **cannot** become members of OTCEI?

(a) Public Listed Corporates
(b) Scheduled Banks
(c) Mutual Funds
(d) Venture Capital Funds
(e) Banking Subsidiaries.

<Answer>

30. Which of the following statements is **not true** with regard to Central Government Dated Securities?

(a) They can be held either in the form of promissory notes or stock certificates
(b) The price quotation of these securities are reported to stock exchange for inclusion in the official quotations list by the licensed dealers
(c) Issue of these securities are handled by RBI
(d) Payment of interest on these securities is handled by the commercial banks for a fee
(e) Discount and Finance House of India offers two way quote in government securities in the secondary market.

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. The dividends on the equity shares of Pioneer Industries Ltd. (PIL) have been experiencing a growth rate of 12% per annum in the recent years, which is considered to be above normal. The above normal growth rate in dividends is expected to continue for four years after which the growth rate will reduce to 5% per annum which will continue indefinitely. The company has recently announced a dividend of Rs.2.00 per share. The required rate of return on the equity shares is 15%.

You are **required** to find out the value of the equity share of PIL. **(10 marks)**

<Answer>

Data for 15-trading days for Group B1 scrips of BSE is given below:

<Answer>

Day	Advances	Declines	Total no. of issues traded
1	199	451	661
2	77	581	664
3	28	634	665
4	473	187	664
5	598	63	665
6	398	236	648
7	296	341	647
8	167	465	648
9	249	386	649
10	342	300	649
11	375	255	652
12	426	212	652
13	316	330	653
14	264	374	653
15	331	322	666

You are **required** to calculate:

a. Short-period A-D line. **(4 marks)**

b. Long-period A-D line. **(6 marks)**

(12 marks)

3. Tetra Pharmaceuticals Ltd., has recently come out with a partly convertible debentures (PCDs) to part finance its Rs.20 crore capacity expansion programme. As per the terms of this issue, 12% PCDs of Rs.200 each will be issued at par. The convertible part of the debenture (Part A) of Rs.100 will be converted into 2 equity shares of face value Rs.10 after 18 months from the date of allotment. The non convertible part (Part B) of Rs.100 will be redeemed after 7 years. Interest will be paid semi annually.

<Answer>

The following additional information, and projections are available about the company:

	March 2004	March 2005	March 2006	March 2007
EPS (Rs.)	3.50	3.00	3.25	3.40
BONUS (Ratio)		1:3		

Month	Jan. 2008	Apr. 2008	July 2008	Sep. 2008	Dec. 2008
Average P/E Ratio	15	14.8	14.5	14.0	13.8

Mr. Rakesh, an investor requires a rate of return of 14% p.a. compounded semi-annually.

You are **required** to advise Mr. Rakesh whether he should subscribe to the issue.

Caselet

Read the caselet carefully and answer the following questions:

4. A value of beta explains the risk associated with a security. With respect to this explain various types of beta values. <Answer >

(6 marks)

5. Beta is a good tool for assessing the movement of stock based on the relationship between the return on the stock and the market. But there are some problems where only beta is used for determining risk of an investment. Discuss. <Answer >

(7 marks)

6. The Beta of a security fails to correctly reflect the inherent risk during the period of economic slowdown and recession. Explain. <Answer >

(5 marks)

In the recent market run, there has been a high level of price volatility. If one has to watch out for the movement of the stock of the leading scrip then the most common way to measure this is by means of 'beta'. Beta is a measure that tells about how much a stock has moved in relation to the index for a defined period of time. Beta value can be readily available from the various websites. Ideally the stock should be such, which can always beat the index. It should rise more when the market are bullish and falls less when market is in a bearish grip. So, according to the risk taking ability of the individual, the stock should be selected. A proper strategy should be framed to invest in a portfolio based on the stock's sensitivity to the market index. Investments that carry higher than average risks should offer the opportunity to earn much higher returns, but in reality, however, it is not very easy to strategic investments, which adhere to that principle. There are many variables that affect the stock return; moreover there is more than one way of calculating risk, thus making risk-reward assessment a complex exercise. Mostly all variables are based on past data and can provide little clue about future.

An analysis of historical beta across sectors does not provide enough evidence to suggest, that high beta stocks deliver better returns in rising market, or fall more steeply in falling market. This is primarily because beta values change rapidly based on market moods. Beta values are useful for positioning a portfolio based on your risk appetite and buying a stock based on beta alone is not a good idea. Investors can find the best use of the beta ratio in short-term decision-making, where price volatility is important. If you are planning to buy and sell within a short period, beta is a good measure of risk. However, as a single predictor in long-term investment, the beta has too many flaws. Careful consideration of a company's fundamentals will give you a much better picture of the potential long-term risk. Beta is also useful in reducing the combined systematic risk of the portfolio. If an investor has a portfolio of highly volatile stock which had beta greater than 1 during the past one year, then it make sense to reduce overall portfolio risk by adding defensive stocks having beta less than 1.

END OF CASELET

E N D O F S

SECTION B

Section C : Applied Theory (20 Marks)

- 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. To cater the need of the different categories of investors globally, various important services are offered by the Mutual Funds. Discuss them in brief. **(10 marks)** <Answer>

8. Listing means admission of securities for trading on a stock exchange. It is done through a formal agreement between the stock exchange and the company. In this context, explain how listing of securities is advantageous to the company as well as to the investor. **(10 marks)** <Answer>

END OF SECTION C

END OF QUESTION PAPER

Suggested Answers
Introduction to Security Analysis (MB3G1F) : October 2008

Section A : Basic Concepts

	Answer	Reason	
1.	C	The growth in the secondary market can be measured through the movement of indices. Therefore, option (c) is the correct answer.	< TOP >
2.	D	Beta is the slope of the regression line (characteristic line). Beta measures non-diversifiable risk also known as systematic risk. Beta indicates the manner in which a security's return changes systematically with changes in the market's return. Beta greater than one is referred to as an aggressive security. Therefore, Option (d) is the correct answer.	< TOP >
3.	B	For a portfolio consisting of two securities: σ_P^2 = Variance = $W_1^2\sigma_1^2 + W_2^2\sigma_2^2 + 2W_1W_2\rho_{12}\sigma_1\sigma_2$ Given: $w_1 = w_2 = 0.50$ (equal proportions) $\sigma_1 = 0$ (risk-free security) $\therefore \sigma_P^2 = 0 + (0.5)^2\sigma_2^2 + 0 = (0.5\sigma_2)^2$ $\therefore \sigma_p$ = Standard deviation of portfolio = $\sqrt{\sigma_P^2} = 0.5\sigma_2$ = Half the standard deviation of the risky security. Therefore, option (b) is the correct answer.	< TOP >
4.	C	The beta of the portfolio consisting of two securities given that money is allotted equally between the two assets = $1.1 \times 0.5 + 1.2 \times 0.5 = 1.15$	< TOP >

The systematic risk of a portfolio = $\beta^2 \sigma_m^2$

Substituting the values, we get

$(1.15)^2 \times 400 = 529(\%)^2$. Hence the correct answer is (c).

5. C < TOP >

New Base year Average = Old Base Year Average $\times \frac{\text{NewMarketValue}}{\text{OldMarketValue}}$

$1{,}010 = X \times \frac{(2{,}500 + 150)}{2{,}500}$

X = 952.83

Thus, Old Base Year Average is Rs. 952.83 crore.

Hence, option (c) is the correct answer.

6. C < TOP >

Entry barriers	Exit barriers		
	Low	High
Low	Low, stable returns	Low, risky returns
High	High, stable returns	High, risky returns

Therefore, Option (c) is the correct answer.

7. E Treatment of research and development expenditure, gratuity liability and depreciation provision affects the profit figure of a company and valuation of inventories also affects the profit and loss account however revaluation of financial investment for treasury operation only affect the balance sheet and hence (e) is the answer. < TOP >

8. C < TOP >

Premium over conversion value $= \frac{\text{Bond price-Conversion value}}{\text{Conversion value}}$

Where conversion value = Current market price of the stock × Conversion rate

In the given case, conversion value $= 66 \times 20 =$ Rs.1,320

Premium over conversion value $= \frac{1{,}650 - 1{,}320}{1{,}320} = 25\%$.

9. D P/S ratio is useful for valuing companies even with no earnings, viz., no dividends at all. < TOP >

P/S ratio can never be negative.

Firms with low profit margins and high P/S ratio are overvalued and those with high profit margins and low P/S ratios are undervalued.

P/S ratio is not influenced by accounting methods used fro depreciation, inventory, etc.,

Statements (I) and (IV) are true, and statements (II) and (III) are not true. Hence (d) is the answer.

10D Option (d) describes the characteristics of the H-model. Two-stage dividend discount model is most suitable to firms that register high growth and they also expect to maintain this growth rate for a certain period of time after the growth rate tends to decline. < TOP >

It is difficult to specify the supernormal growth period with precision since the growth rate is expected to reduce to stable level after this period. The model suffers with the limitation of the change of high supernormal growth to a lower stable growth rate at the end of the supernormal growth period. The terminal price calculated in this model is derived from Gordon model and hence it suffers from the limitation of the Gordon model. This model assumes two-stage i.e. high-growth period and stable-growth period for valuing a stock.

Therefore, Option (d) is the correct answer.

11C Duration = 1/Dividend yield = 1/(5.8/78) = 13.45 years. < TOP >

12E For bonds with a shorter term to maturity, realized yield will be closer to the YTM. Other statements are said to be false. Hence option (e) is said to be the correct answer. < TOP >

13A Post tax yield to maturity = cost of acquisition $(1+r)^{15}$ = Post tax redemption value < TOP >

= $480.50(1+r)^{15} = 97,164.16$

= $(1+r)^{15} = 202.21 = 42.47\%$

14C When mutual fund managers do not on average make superior returns that means using public information any abnormal return is not possible and this supports semi-strong form of market hypothesis. Hence (d) is not correct. Trend analysis will be worthless if historical information cannot be used for superior returns and this also supports semi-strong form of market efficiency. Hence (b) is not correct. If positive abnormal returns can be expected from low P/E stock if signifies that publicly available information can be used to gain abnormal return and this is in against semi-strong form of market efficiency. However, if no investor can make superior profits by buying or selling stock after the announcement of expected rise in dividends it is in accordance with semi-strong form efficiency rules. According to this for, current stock prices reflect all publicly available information such as earnings, stock and cash dividends, interest rate changes etc. And so an investor cannot make superior profits by changing his portfolio according to the changes in the interest rates. Hence, statement (e) also supports semi-strong form of market efficiency. < TOP >

Hence (c) is correct answer.

15A Given $r_M = 8\%$ < TOP >

Expected return on ACC's stock , $r_{ACC} = 0.15\% + 1.2 \times 8\% = 9.75\%$

Since the actual return on ACC's stock is 7%,

Abnormal return = Actual return – expected return = 7% - 9.75% = -2.75%

Hence (a) is the answer.

16B Momentum is used to identify the trend reversal before it takes place.

Therefore, Option (b) is the correct answer.

17A Volumes reduce as the symmetrical triangle narrows towards the apex. < TOP >

In a Right angled Triangle, the resistance or support level is implied in its formation.

Other statements are true with respect to triangles.

Therefore, Option (a) is the answer.

18D The difference between two futures prices is known as spread. The inter commodity and intra commodity spreads require lower margin vis-à-vis single contracts. The logic behind lower margins is that the prices of futures contract in a spread are usually related and the initial margin which is deposited for a spread covers both the contract of the spread. As a result, the risk of spread is quite low as compared to the risk of a single contract. Basis = Current cash price – Futures price. Generally basis is higher for futures contract with longer maturity. Hence (I), (II) and (IV) are correct and (III) is not correct. < TOP >

19B Futures margin depend on the price volatility of the underlying asset. Exchanges generally set this margin equal to $\mu + 3\ \sigma$ then μ is the average daily absolute change in the value of contract and σ is standard deviation of these changes over a period of time. Hence only (I) and (III) are correct and therefore (b) is the answer. < TOP >

20D Intrinsic value = Rs.380 – Rs.370 = Rs.10 < TOP >

Time value = Rs.16 – Rs.10 = Rs.6

21E A call option is said to be in-the-money, if the market price of the underlying asset is greater than the strike price. A put option is said to be in the money, if the strike price is greater than the market price of the underlying asset. So except B and E, all are not in the money and the answer is (e). < TOP >

22D Conversion parity price = Bond Price/Number of shares on conversion per warrant < TOP >

38.50 = x/28

x = Rs. 1078.00

23E According to Liquidity Preference Theory, spenders keep a proportion of their assets as cash balances for maintaining liquidity. < TOP >

According to this Pure Expectations Theory, the current term structure of interest rates is determined by the consensus forecast of future interest rates.

According to the loanable funds theory, interest rates in different sectors in the economy can be predicted as the theory focuses on the demand and supply aspects of the funds in an economy with different sectors like the household sector, the business sector and the government sector.

According to the Liquidity Premium Theory, the investors are not indifferent to risk and they charge higher rates than the expected future rates, if the maturity of the instrument increases.

According to the Preferred Habitat Theory, it is not necessary that the liquidity premium should increase at a uniform rate with maturity.

Statements (a), (b), (c), and (d) are true, and statement (e) is not true. Hence (e) is the answer.

24A If market interest rates were to change, Bond B would have the greatest change in price because smaller coupon bonds will change more than the higher coupon bonds. Hence, (I) is correct and III is incorrect. Bond A is a premium bond and hence its price decreases as it reaches maturity. Hence II is incorrect and the answer is (a). < TOP >

25E According to the Principle of Highest and Best Use, a rational owner will try to gain the maximum out of the resources he has. < TOP >

According to the Principle of Change, price is function of demand and supply and value of property fluctuates with price.

According to the Principle of Marginal Productivity, the value of any factor of production or component of a property can add to or lower the value of the asset.

According to the Principle of Substitution, a rational buyer will not spend more than the amount it is going to cost him if he buys similar property with same utility.

Hence (e) is the answer.

26B The shares of close-ended funds are not redeemable at their NAV, but these shares are traded in the secondary market at stock exchanges at market prices that may be above or below their NAV. < TOP >

Open-ended funds can sell unlimited number of shares and keep their fund growing.

The fund units are sold to the public at the Public Offering Price (POP).

Real estate fund is of close-ended type.

Specialized funds envisage to specialize investment in securities of firms of certain industries or specific income producing securities. Such funds carry more risk for lack of diversification approach.

Hence (b) is the answer.

27B < TOP >

$$NAV = \frac{\text{Value of Investments} + \text{Receivables} + \text{Accrued Income} + \text{Other current Assets} - \text{Liabilities} - \text{Accrued expenses}}{\text{Number of outstanding units}}$$

$$12.37 = \frac{1737.10 + 130.30 + 43.40 + 521.13 - 390.85 - 86.86}{\text{Number of outstanding units in crore } (N_o)}$$

$$N_o = \frac{1954.22}{12.37} = 157.98 \text{ crore.}$$

28C (a) Is not correct in as pioneering stage not few but many firms are level into industry as a result of profit opportunity. < TOP >

(b) Is not correct as in stabilization stage few companies continue to get stronger, both in share in share of market and financially.

(c) The pioneering stage is typified by rapid growth in demand for the output of the industry.

(d) Is not correct as it is not the expansion stage but the pioneering stage where a large number of firms attempt to capture their share of the market, there arises a high business mortality rate.

(e) Is not correct as stabilization phase is typified by increase competition between firms.

Hence (c) is the answer.

29A The following can become members of OTCEI: < TOP >

- Public financial institutions
- Scheduled banks
- Mutual funds
- Venture capital funds and venture capital companies
- NBFCs
- Banking subsidiaries.
- All the above can become members of OTCEI by fulfilling the eligibility norms laid down by OTCEI such as network, approval of SEBI, infrastructure, standing and experience, etc.,

Hence (a) is the answer.

30D All statements are correct except option (d). The RBI handles payment of interest on these securities. < TOP >

Therefore, option (d) is the correct answer.

Section B : Problems

1. Dividend stream during the period of abnormal growth: < TOP >

$D_1 = 2.00\ (1.12)$

$D_2 = 2.00\ (1.12)^2$

$D_3 = 2.00\ (1.12)^3$

$D_4 = 2.00\ (1.12)^4$

Present value of the dividends payable during the period of above-normal growth

$$= \frac{2(1.12)}{1.15} + \frac{2(1.12)^2}{(1.15)^2} + \frac{2(1.12)^3}{(1.15)^3} + \frac{2(1.12)^4}{(1.15)^4} = \text{Rs.}7.49$$

Value of the share at the end of 4 years (Value at normal growth in dividends)

$$= \frac{2(1.12)^4(1.05)}{0.15 - 0.05} = \text{Rs.}33.044$$

Present value of the share at the normal growth rate

$$= \frac{33.044}{(1.15)^4} = \text{Rs.}18.89$$

Value of the share = 7.49 + 18.89 = Rs.26.38.

2.a. Short-period A-D line: < TOP >

For short-period observations A-D lines do not account for unchanged stocks:

Day	Issues traded	Advances	Declines	Net (A-D)	Cumulative (A-D)
1	661	199	451	-252	-252
2	664	77	581	-504	-756
3	665	28	634	-606	-1362
4	664	473	187	286	-1076
5	665	598	63	535	-541
6	648	398	236	162	-379
7	647	296	341	-45	-424
8	648	167	465	-298	-722
9	649	249	386	-137	-859
10	649	342	300	42	-817
11	652	375	255	120	-697
12	652	426	212	214	-483
13	653	316	330	-14	-497
14	653	264	374	-110	-607
15	666	331	322	9	-598

The statistics indicate that over a period of 15-days, the number of stocks gone down is more than the number of stocks gone up. So,it is assumed that the market is still in the bearish grip.

b. Long-period A-D line:

For long period observations, the A-D line is drawn after considering those stocks also whose price remain unaltered. The A-D line is drawn by accumulating the value of $\sqrt{A/U-D/U}$.

Days	Issues traded (1)	Adv - ances (2)	Declines (3)	Un -change d (4)	(2)/(4) × 100 (5)	(3)/(4) × 100 (6)	(5)-(6) (7)	$\sqrt{(5)-(6)}$ (8)	Cumulative (A – D) (9)
1	661	199	451	11	1809.09	4100.00	-2290.91	-47.86	-47.86
2	664	77	581	6	1283.33	9683.33	-8400.00	-91.65	-139.51
3	665	28	634	3	933.33	21133.33	-20200.00	-142.13	-281.64
4	664	473	187	4	11825.00	4675.00	7150.00	84.56	-197.08
5	665	598	63	4	14950.00	1575.00	13375.00	115.65	-81.43
6	648	398	236	14	2842.86	1685.71	1157.14	34.02	-47.41
7	647	296	341	10	2960.00	3410.00	-450.00	-21.21	-68.63
8	648	167	465	16	1043.75	2906.25	-1862.50	-43.16	-111.78
9	649	249	386	14	1778.57	2757.14	-978.57	-31.28	-143.07
10	649	342	300	7	4885.71	4285.71	600.00	24.49	-118.57
11	652	375	255	22	1704.55	1159.09	545.45	23.35	-95.22
12	652	426	212	14	3042.86	1514.29	1528.57	39.10	-56.12
13	653	316	330	7	4514.29	4714.29	-200.00	-14.14	-70.26
14	653	264	374	15	1760.00	2493.33	-733.33	-27.08	-97.34
15	666	331	322	13	2546.15	2476.92	69.23	8.32	-89.02

Since there is no significant change in number of unchanged issues, we can conclude that there is no sign of trend reversal.

3. The intrinsic value of the above PCD is calculated as under:

≤ TOP ≥

Present value of interest payments

= 12 × PVIFA (7%, 3) + 6 × PVIFA (7%, 11) × PVIF(7%, 3)

= 12 × 2.6243 + 6 × 7.4987 × 0.8163 = 68.2186

≅ 68.22. ----------(I)

Year Ended	2004	2005	2006	2007
Bonus adjusted EPS (Rs.)	3.50	4.00	4.33	4.53

Growth rate (g) implicit in the bonus adjusted EPS can be obtained from the equation

$3.5 (1 + g)^3 = 4.53$

$\Rightarrow \quad g = \left(\frac{4.53}{3.5}\right)^3 - 1 = 0.0898$ i.e. 8.98%

Projected EPS in July, 2003 $= 3.4\left(1 + \frac{0.0898}{3}\right) =$ Rs.3.50

Average P/E ratio between January 2003 to July 2003 (6 months period prior to conversion)

$= \frac{15.0 + 14.8 + 14.5}{3} = 14.77.$

Therefore, projected market price of share after 18 months = 3.50×14.77 = Rs.51.70

Present value of market value of conversion after eighteen months

$= 51.70 \times 2 \times$ PVIF (7%, 3)

$= 103.40 \times 0.8163$ = Rs.84.41 ----------(II)

Present value of non-convertible portion redeemed after 7 years

$= 100 \times$ PVIF (7%, 14)

= 38.78. ----------(III)

Intrinsic value of the PCD = I + II + III

= 62.88 + 84.41 + 38.78

= Rs.191.41

Therefore, it is recommended not to invest in the proposed PCD as it is just rightly priced whereas the projected declining P/E ratio may take the price of convertible portion further down.

4. The various types of beta values are as under: ≤ TOP ≥

Negative beta - A beta less than 0 - which would indicate an inverse relation to the market - is possible but highly unlikely. Some investors used to believe that gold and gold stocks should have negative betas because they tended to do better when the stock market declined, but this hasn't proved to be true over the long term.

Beta of 0 - Basically, cash has a beta of 0. In other words, regardless of which way the market moves, the value of cash remains unchanged (given no inflation).

Beta between 0 and 1 - Companies with volatilities lower than the market have a beta of less than 1 (but more than 0).

Beta of 1 - A beta of 1 represents the volatility of the given index used to represent the overall market, against which other stocks and their betas are measured.

Beta greater than 1 - This denotes a volatility that is greater than the broad-based index. Technology companies on the Nifty have a beta higher than 1.

5. Beta seems to be good measure for determining risk of an investment but there are some problems with relying on beta scores alone. ≤ TOP ≥

- Beta looks backward and history is not always an accurate predictor of the future.
- Beta also doesn't account for changes that are in the works, such as new lines of business or industry shifts.
- The stocks, which have substantial weight in the portfolio, may result in a lower beta implying that the risk is very low and the other stocks may result in a higher beta implying that the stocks are risky. Thus the accuracy of the beta estimate is based on the right index chosen.
- Beta suggests a stock's price volatility relative to the whole market, but that volatility can be upward as well as downward movement. In a sustained advancing market, a stock that is outperforming the whole market would have a beta greater than 1.
- Before estimating the beta one needs to decide the time horizon over which the regression has to be made. If only few observations are made then the estimate may not reflect the true beta.
- Accuracy of the beta also depends on the time interval over which the returns are computed. The interval should be chosen based on the trading cycle of the user i.e. if the trading cycle is daily it is better to have monthly returns for regression otherwise results may not be truly reflecting the changes.

6. If we consider the general economic cycle it will be like slowdown in the economy, a recession, revival in the economic activity followed by and economic boom and then slowdown. If we observe the economic activity during each of these phases we find that each one is a distinct phase. The characteristics of slowdown in the economy are different from that of economic recession and the characteristics of recession are different from ≤ TOP ≥

the characteristics of the revival in the economy. That is, any parameter computed in one phase may not be applicable to study the characteristics of any other phase. Similar is the problem with Beta also. A Beta computed during periods of recession is not applicable during the periods of boom or during the periods of economic revival. It has to be adjusted properly in order to reflect he characteristics of the period under study. Therefore, beta which denotes the systematic risk or undiversified risk component computed in some other period fails to reflect correctly the associated risk of a stock during periods of economic slowdown and recession.

Section C: Applied Theory

7. MUTUAL FUND SERVICES

< TOP >

Financial Mutual Funds, to cater to the need of the different categories of investors, launch schemes involving services to the investors. These are special services in addition to the returns which Mutual Funds offer to the investors, these services are vulnerable to. investors and attract them to invest their savings in those Mutual Funds which have such plans to meet their various needs, for example, regular income plan, savings and reinvestment plans, health insurance schemes, equity-linked savings plans for tax exemption purposes, etc.

Some of the important services offered by Mutual Funds globally are discussed below:

Saving Scheme

This is one of the inherent objectives of investors to accumulate their savings, voluntary saving plan can be added to Mutual Funds through which an investor can save on monthly or quarterly basis and thus the amount so saved will be added to purchase the units in the Mutual Funds.

The important features of such plans are,

a. Savings could be made through voluntary saving plans which are at the option and free will of the investor to contribute any sum at any time on regular or irregular basis.

b. Alternatively, savings could be made through contractual saving plans pursuant to some agreement envisaging a long-term investment plan binding upon the investor.

   In the USA, these plans are quite in vogue and are under regulation of Securities Exchange Commission. These plans charge investors with substantially high front-end loads. An investor is required to pay commissions over the life of the contract which are recovered in advance in the initial year of the contract from initial installments in the form of front-end loads.

c. The investors who drop out from the contractual plans as stated in (b) above remain at a disadvantage as the prepaid commission is not refunded to them. Securities Exchange Commission has made rules requiring Mutual Funds to refund the full amount of prepaid commission to investors if the investor cancels the plan within 45 days and 85% of the amount, if the investor cancels within 18 months of joining the saving plan. Those who cancel the commitment after 18 months get no refund.

Automatic Reinvestment Plan

The UTI, in India, has also started this plan where like in the USA, the amount of dividend and other income accrued on mutual fund investments is automatically reinvested in purchasing additional units or shares in the open-ended funds. Other Mutual Funds in the public sector have followed suit.

Regular Income Plan

Systematic withdrawal is allowed to investors of their money locked in mutual fund investments in the form of regular income by way of monthly or quarterly installments to meet their regular financial needs. Initial investment in such plans is stipulated which carries interest at the specified rate. The repayment installments are so formulated as to pay out the earnings first and then the principal amount.

Shifting Advantage or Conversion Privileges

Many mutual fund companies offer different investment plans for investors and many provide the facility to investors within the family of the plans to shift or convert or exchange them afterwards from one plan to another at nominal costs or at no costs subject to tax advantages, if any, available to the investors.

Retirement Pension Plans

Mutual Funds are now very much linked with retirement pension plans. They facilitate

setting up by individuals and companies, the tax deferred retirement plans for self or their employees respectively. Regular monthly income plans in India offered by UTI and other Mutual Funds established by nationalized banks are alike.

Insurance Plan

Mutual Funds offer in the USA a relatively new service in the form of insurance program that protects an investment in mutual fund against a long-term loss. The insurance cover is available for a period ranging from 10 to 15 years, for the amounts ranging from $3,000 to $2,00,000 at a premium of about 6% of the insured sum for a period of 10 years. In dollar terms the insurance of a sum of $1,00,000 will cost $600 for a period of 10 years. One has to assess the loss on the insured sum. In the case of capital loss accruing $10,000 then this loss will be completely met by insurance company to cover up the insurance sum of $1,00,000.

LIC Mutual Fund and UTI have come out with schemes providing life insurance covers to the investors.

Cheque-writing Facilities

In the USA, all Mutual Funds offer to the investors the facility of drawing cheques on the Mutual Funds to draw the money invested in Mutual Funds. These cheques are drawn and paid through the funds' banks. This service is rendered frequently by all the Mutual Funds in the USA, In India, Mutual Funds have yet to conceive such novel and innovative schemes.

To conclude, real service to investors is done by Mutual Funds by offering the schemes which directly offer income, capital gains and solutions to their personal individual problems. For this purpose, Mutual Funds should maintain marketing research wing which should always remain on toes looking for new opportunities and conceiving innovative schemes to meet the other conceptual needs of the investors than income and gains in money terms.

8. Advantages of Listing

< TOP >

Listing of securities on the stock exchanges is advantageous to the company as well as to the investors as seen hereunder:

a. **To the Company**

i. The company enjoys concessions under Direct Tax Laws - In such companies the public is substantially interested resulting in lower rate of income tax payable by them;

ii. The company gains national and international importance by its share value quoted on the stock exchanges;

iii. Financial institutions/bankers extend term loan facilities in the form of rupee currency and foreign currency loan;

iv. It helps the company to mobilize resources from the shareholders through 'Rights Issue' for programs of expansion and modernization without depending on the financial institutions in line with the government policies;

v. It ensures wide distribution of shareholding thus avoiding fears of easy takeover of the organization by others.

b. **To the Investors**

i. Since the securities are officially traded, liquidity of investment by the investors is well ensured;

ii. Rights entitlement in respect of further issues can be disposed of in the market;

iii. Listed securities are well preferred by bankers for extending loan facility;

iv. Official quotations of the securities on the stock exchanges corroborate the valuation taken by the investors for purposes of tax assessments under Income Tax Act, Wealth Tax Act, etc.;

v. Since securities are quoted, there is no secrecy of the price realization of securities sold by the investors;

vi. The rules of the stock exchange protect the interest of the investors in respect of their holdings;

vii. Listed companies are obligated to furnish unaudited financial results on a half-yearly basis within two months of the expiry of the period. The said details

enable the investing public to appreciate the financial results of the company in between the financial year;

viii. Takeover offers concerning listed companies are to be announced to the public. This will enable the investing public to exercise its discretion on such matters.

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