

Paper-11: CAPITAL MARKET ANALYSIS & CORPORATE LAWS

Section I : Capital Market Analysis

Q. 1. (a) In each of the cases given below one out of four is correct. Indicate the correct answer and give your workings/reasons briefly.

(i) If the sale price of an open ended fund is ₹ 12.30 per unit and the fund is sold with a front end load of 5%, what is the NAV?

- A. ₹ 10.00
- B. ₹ 9.75
- C. ₹ 11.70
- D. ₹ 11.07

(ii) Nifty Index is currently quoting at 1329.78. Each lot is 250. Mr. A purchases a February contract at 1364. He has been asked to pay 10% initial margin. What is the amount of initial margin?

- A. ₹ 34,100
- B. ₹ 33,244
- C. ₹ 136.40
- D. ₹ 132.97

(iii) Cipla Ltd. announced a rights issue of four shares of ₹ 100 each at a premium of 160% for every five shares held by the existing shareholders. The market value of the shares at the time of rights issue is ₹ 395. The value of right is :

- A. ₹ 90
- B. ₹ 80
- C. ₹ 60
- D. ₹ 55

(iv) Petro Tech has issued some warrants that allow the holder to purchase, with one warrant, one equity share at ₹ 28.50. If the equity share is selling at ₹ 37.50, what would be the minimum price?

- A. ₹ 28.50
- B. ₹ 33.00
- C. ₹ 9.00
- D. ₹ 15.00

(v) If the share price of AB Ltd. (F.V. ₹ 10) quotes ₹ 920 on NSE, and the 3 months futures price quotes at ₹ 950, and the borrowing rate is given as 8% and the expected annual dividend yield is 15% p.a. payable before expiry, then the price of 3 months AB Ltd. futures would be :

- A. ₹ 948.80
- B. ₹ 939.90
- C. ₹ 936.90
- D. ₹ 928.40

(vi) An investor has ₹ 5,00,000 to invest. What will be his expected risk premium in investing in equity versus risk-free securities in the following conditions :

| Investment | Probability | Expected return |
|--------------------|-------------|-----------------|
| Equity | 0.6 | ₹ 2,00,000 |
| | 0.4 | (-) ₹ 1,50,000 |
| Risk-free security | 1.0 | ₹ 25,000 |

- A. ₹ 35,000
- B. ₹ 45,000
- C. ₹ 60,000
- D. ₹ 85,000

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(vii) A New York bank wants to fund their account called 'Vostro A/c', with an Indian bank by ₹ 10 million. What dollar amount the New York bank would deposit in the Indian bank's account called 'Nostro A/c', maintained in New York when inter bank rate is US\$ 1 = ₹ 44.50 – 70?

- A. US\$ 2,23,713.64
- B. US\$ 2,24,216.37
- C. US\$ 2,24,719.10
- D. US\$ 2,23,965.00

(viii) Citi Bank wants to calculate Rupee TT selling rate of exchange for DM since a deposit of DM 1,00,000 in a FNCR A/c. has matured, when :

- EURO 1 = DM 1.95583 (locked in rate)
- EURO 1 = US\$ 1.02348/43
- US\$ 1 = ₹ 40.51/53

What would be the Rupee TT Selling rate for DM currency that the bank can consider for the said a/c.?

- A. ₹ 25.3851
- B. ₹ 21.1988
- C. ₹ 21.2082
- D. None of the above

(ix) A company issue commercial paper for ₹ 3 crore with a maturity period of 90 days. The interest rate is 11% p.a. The net amount received by the company will be :

- A. 2.94 crore
- B. 2.92 crore
- C. 2.85 crore
- D. None of the above

(x) MS Ltd. has a debt-equity mix of 30/70. If MS Ltd.'s debt Beta is 0.30 and Beta for its activity (or project) is 1.21, what is the Beta for its Equity?

- A. 1.65
- B. 1.60
- C. 1.52
- D. None of the baove

Q. 1. (b) Choose the most appropriate one from the stated options and write it down. (only indicate A, B, C, D as you think correct) :

(i) Fair value of an option represents

- A. Intrinsic value of the option
- B. Time value of the option
- C. Both (A) and (B)
- D. None of the above.

(ii) Buying and selling call or put option with same strike price but different expiration dates is called —

- A. Long hedge
- B. Short hedge
- C. Horizontal option spread
- D. None of the above

Revisionary Test Paper_Final_Syllabus 2008_June 2013

- (iii) A shareholder has received bonus shares in the proportion of 1:1. What is the stockholding in the company? (indicate the most appropriate alternative)
- A. Stockholding remains the same
 - B. Stockholding has gone up with more shares available for trading
 - C. Stockholding has gone up
 - D. Stockholding remains the same with more shares available for trading.
- (iv) It is quite common for banks to issue subordinated debt. The reasons are :
- A. Fund raising
 - B. It is treated as quasi-equity
 - C. It does not increase debt-equity ratio
 - D. It is included in Tier II capital for the purpose of determining capital adequacy.
- (v) In efficient market, the market price is an 'unbiased estimate' of the true value of the stocks (shares). This implies that :
- A. The market price always equals the true value
 - B. The market value has no relation to the true value
 - C. Market make mistakes about true value, which can be exploited by investors
 - D. Market prices contain errors, but these being random cannot be exploited by investors.
- (vi) A portfolio is not efficient if there is another portfolio within :
- A. A higher expected return and lower standard deviation
 - B. A lower expected return and some standard deviation
 - C. The same expected return and higher standard deviation
 - D. None of the above
- (vii) The aim of foreign exchange risk management is :
- A. To maximize profits
 - B. To minimize losses
 - C. To know with certainty the quantum of future cashflows
 - D. To earn a minimum level of profit
- (viii) Eurodollar deposit means :
- A. Dollar deposit outside USA
 - B. Dollar deposit beyond the control monetary authority
 - C. Dollar deposit in the US and outside US
 - D. None of the above
- (ix) In an arbitrage portfolio, the change in the proportions of different securities will add upto :
- A. One
 - B. Zero
 - C. Less than one
 - D. Greater than one
- (x) Which of the following do not issue securities in the primary market?
- A. FIIs
 - B. State Governments
 - C. Companies
 - D. None of the above

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 1. a)

i. - C

Sale Price = NAV (1 + Load%)

Therefore NAV = Sale Price / (1 + Load%) = 12.30/1.05 = ₹ 11.70 Approx.

ii. - A

The closing price for the spot index was 1329.78. The rupee value of stocks is thus 250 x 1329.78 = ₹ 3,32,445.00

The closing futures price for the February contract was 1364.00, which has a rupee value of 1364 x 250 = ₹ 3,41,000.00 and therefore requires a margin of ₹ 34,100.

iii. - C

$$\text{Value of right} = \frac{r(M - S)}{N + r}$$

| | | | |
|----------------|---|--------------------------------|---------|
| Where, | r | = number of rights issued | = 4 |
| | N | = number of equity shares | = 5 |
| | M | = market price | = ₹ 395 |
| | S | = issue price of rights | |
| | | = ₹ 100 + (₹ 100 x 160%) | = ₹ 200 |
| Value of right | | = $\frac{4(395 - 260)}{5 + 4}$ | = ₹ 60 |

iv. - C

The minimum price should be the difference between the sale price and the exercise price, when the exercise ration is 1.

$$= ₹ 37.50 - ₹ 28.50 = ₹ 9.00$$

v. - C

$$\begin{aligned} \text{Future price (F)} &= \text{Spot} + \text{Cost of carry} + \text{Dividend} \\ &= 920 + (920 \times 0.08 \times 3/12) - (10 \times 0.15) \\ &= 920 + 18.40 - 1.50 = ₹ 936.90 \end{aligned}$$

vi. - A

$$\begin{aligned} \text{Expected premium} &= (0.6 \times ₹ 2,00,000) + [0.4 \times (-) ₹ 1,50,000] - ₹ 25,000 \\ &= ₹ 1,20,000 - ₹ 60,000 - ₹ 25,000 = ₹ 35,000 \end{aligned}$$

vii. - C

The banker's quote for selling is :

$$= ₹ 1,00,00,000 / ₹ 44.50 = \text{US\$ } 2,24,719.10$$

viii. - B

This involves finding the cross rate of ₹/DM.

$$\text{₹/DM} = \text{₹/\$} \times \$ / \text{Euro} \times \text{Euro/DM}$$

The DM need to be sold ; hence we need to find the rate of the quote ₹/DM

$$\begin{aligned} [\text{₹/DM}] \text{Bid} &= [\text{₹/\$}] \text{Bid} \times [\$/\text{Euro}] \text{Bid} \times [\text{Euro/DM}] \text{Bid} \\ &= (₹ 40.51 \times 1.02348) / 1.95583 \\ &= ₹ 21.1988 \end{aligned}$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

ix. - B

11% p.a. interest for 90 days on Re 1.

$$= 0.11 \times 90/365 = 0.0271232$$

$$\text{Amount after 90 days} : 1.0271232$$

$$\text{Net amount received} = \frac{\text{₹ } 3,00,00,000}{1.0271232} = 2,92,07,791 \text{ i.e. ₹ 2.92 crore}$$

x. - B

$$\beta_A = \beta_d (D/V) + \beta_e (E/V)$$

$$\text{or, } 1.21 = 0.30 (0.3) + \beta_e \times 0.7$$

$$= 0.09 + 0.7 \beta_e$$

$$\text{Or, } \beta_e = (1.21 - 0.09)/0.7 = 1.12/0.7 = 1.60$$

Answer 1. (b)

- (i) - C
- (ii) - C
- (iii) - D
- (iv) - D
- (v) - D
- (vi) - A
- (vii) - C
- (viii) - B
- (ix) - B
- (x) - A

Q. 2. (a) What are the various risks associated with derivatives?

(b) What is difference between Primary market and Secondary market?

(c) Given the following risky portfolios

| | A | B | C | D | E | F | G | H |
|------------|----|------|----|----|----|----|----|----|
| Return % | 10 | 12.5 | 15 | 16 | 17 | 18 | 18 | 20 |
| σ % | 23 | 21 | 25 | 29 | 29 | 32 | 35 | 45 |

- (i) Which of these portfolios are efficient? Which are inefficient?
- (ii) Suppose one can tolerate a risk of 25%, what is the maximum return one can achieve if no borrowing or lending is resorted to?
- (iii) Suppose one can tolerate a risk of 25%, what is the maximum return one can achieve if borrowing or lending at the rate of 12% is resorted to?

Answer 2. (a)

Various risks associated with derivatives are as follows :

- (i) **Market Risk** – Price sensitivity to fluctuations in interest rates and foreign exchange rates.
- (ii) **Liquidity Risk** – Most derivatives are customized instruments, hence may exhibit substantial liquidity risk.
- (iii) **Credit Risk** – Derivatives not traded on exchange are traded in the Over the Counter (OTC) markets. OTC contracts are subject to counter party defaults.
- (iv) **Hedging Risk** – Derivatives are used as hedges to reduce specific risks. If the anticipated risks do not develop, the hedge may limit the funds total return.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

- (v) **Regulatory Risk** – Owing to the high risk characteristics inherent in the derivatives market, the regulatory controls is sometimes too oppressive for market participants.

Answer 2. (b)

Primary Market vs. Secondary Market :

In the primary market, securities are offered to public for subscription for the purpose of raising capital or fund. Secondary market is an equity trading avenue in which already existing/pre- issued securities are traded amongst investors. Secondary market could be either auction or dealer market. While stock exchange is the part of an auction market, Over-the-Counter (OTC) is a part of the dealer market.

The SEBI is the regulatory authority established under Section 3 of SEBI Act 1992 to protect the interests of the investors in securities and to promote the development of, and to regulate, the securities market and for matters connected therewith and incidental thereto.

Answer 2. (c)

- (a) Using the risk-return tradeoff, an investor would prefer B to A (B gives higher return for lower risk, hence dominant); would prefer C; would prefer E to D (E gives higher return for lower risk and hence dominant); would prefer F to G (F is dominant because it offers 18% at lower risk); and H; Hence portfolios B, C, E, F & H are efficient. Portfolios A, D & G are inefficient.

- (b) As seen from the table, if the maximum risk of 25% can be tolerated, then Portfolio C can be chosen to give a maximum return of 15%.

- (c) However, if borrowing/lending can be resorted @12%, then one can borrow in such a manner that the total risk does not exceed 25%. As we know higher returns can be obtained by borrowing at the risk free rate and investing in a risky portfolio. Obviously risk too would increase. Now we need to find that portion of investment in risky portfolio, which will give us maximum return for a risk not greater than 25%. Therefore let us assume weight of investment in risky portfolio be 'x'. Therefore (1-x) would be the weight in risk free asset. It is clear that since σ of risk free asset is zero, we need to find just that proportion in risky security to get 25%.

Thus we have for Portfolio A investment in proportion of 25/23 and -2/23 in risk free instrument (including borrowing) to arrive at a total risk of 25%. We simply used the below formula. [Note substitute σ of Risk free portfolio = 0]

$$x \times \sigma \text{ of Risky Portfolio} + (1-x) \times \sigma \text{ of Risk free portfolio} = 25\%$$

'x' found above, would be used it to find total return.

$$\text{Total return} = x \times \text{Return of Risky Portfolio} + (1-x) \times 12$$

Thus we get the table given below.

| | A | B | C | D | E | F | G | H |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Proportion in risky security | 25/23 | 25/21 | 25/25 | 25/29 | 25/29 | 25/32 | 25/35 | 25/45 |
| To get Risk | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Return | 9.83 | 12.60 | 15.00 | 15.45 | 16.31 | 16.69 | 16.29 | 16.44 |

We see from the table that a maximum return of 16.69% is obtained for portfolio F, when we invest in a proportion of 25/32 in portfolio F & balance 7/32 in risk free asset.

Q. 3. (a) Write short note on Chaos Theory.

(b) What are the drawbacks of Mutual Funds?

(c) Ram holds a diversified equity portfolio of ₹ 150 Crores with beta 1.5. Shyam holds his entire money in stock X of same value with a beta of 0.9. Both are planning to hedge their holdings using futures. The following futures are available :

- (i) Nifty Index Futures @ 4550 (Each lot = 50 units) (ii) Futures of stock X @ 1520 (Each lot = 100 units)

How Ram & Shyam would perfectly hedge their portfolios using the above futures? Examine all possible options and find the number of contracts required to hedge, gain or loss overall on hedging if it is expected that markets would fall by 10% from the current level. Today spot Nifty is at 4500 and stock X is quoting at ₹ 1500.

Answer 3. (a)

At recent finance conferences, a few researchers have presented papers on chaos theory and its application to the stock market. In physics, chaos theory is growing field of study examining instances in which apparently random behaviour is, in fact, quite systematic or even deterministic. Scientists apply this theory to weather prediction, population growth estimates, and fisheries biology.

- As an example of the latter application, a given volume of ocean water, left free from human interference, will not necessarily reach an equilibrium population of the various species that inhabit it. As fish grow, they consume the smaller fry (of their own or a different species) in increasing numbers. Fewer younger fishes are left to mature; this, coupled with the natural death of the older fish, eventually results in a sudden drastic reduction in fish population, causing dismay to fishermen and excitement in the local media. At the same time, it results in reduced predation and food competition by the surviving fry, so the population begins to grow dramatically, and the cycle continues. Interactions between species add complexity to the process.
- Investment analysts have sought a pattern in stock market behavior since the origin of the exchanges. Much remains unknown about how security prices are determined, and chaos theory may eventually provide some potential answers. If the apparent randomness of security price changes, can be shown to be nonrandom, much of the theory of finance would need revision.

Answer 3. (b)

Mutual funds have their drawbacks and may not be for everyone :

- **No Guarantees** : No investment is risk free. If the entire stock market declines in value, the value of mutual fund shares will go down as well, no matter how balanced the portfolio. Investors encounter fewer risks when they invest in mutual funds than when they buy and sell stocks on their own. However, anyone who invests through a mutual fund runs the risk of losing money.
- **Fees and commissions** : All funds charge administrative fees to cover their day-to-day expenses. Some funds also charge sales commissions or "loads" to compensate brokers, financial consultants, or financial planners. Even if you don't use a broker or other financial adviser, you will pay a sales commission if you buy shares in a Load Fund.
- **Taxes** : During a typical year, most actively managed mutual funds sell anywhere from 20 to 70 percent of the securities in their portfolios. If your fund makes a profit on its sales, you will pay taxes on the income you receive, even if you reinvest the money you made.
- **Management risk** : When you invest in a mutual fund, you depend on the fund's manager to make the right decisions regarding the fund's portfolio. If the manager does not perform as well as you had hoped, you might not make as much money on your investment as you expected. Of course, if you invest in Index Funds, you forego management risk, because these funds do not employ managers.

Answer 3. (c)

Ram can hedge his diversified equity holding using a diversified market index viz. Nifty. The basic concept in choosing the hedge instrument is the correlation between the asset and the hedge instrument. If the correlation is high then buying one and selling another would more or less offset all gains in one with losses in another and vice versa. Ram is holding a diversified portfolio and hence use would hedge using diversified market index viz. Nifty Index Futures. If the correlation is highly negative, then having both, i.e. buying the underlying and buying the hedge instrument would serve the hedge purpose. Using beta we can say that the stock X more or less behaves like market. Moreover, stock and stock futures are expected to have same beta, meaning high correlation. Hence Shyam can either use Nifty Index futures or stock futures to hedge his stock holdings.

Ram would sell Nifty futures equivalent to beta times value of his portfolio for perfect hedge i.e. he should sell $1.5 \times 150 \text{ Crores} = ₹ 225 \text{ Crores}$ at 4550 levels i.e. $225 \text{ Crores} / (4550 \times 50) = 9890$ contracts approximately.

With markets falling 10%, portfolio value will fall by 1.5 times 10% i.e. 15% i.e. $15\% \times 150 \text{ Crores}$ or a loss of ₹ 22.5 Crores. Nifty futures which are sold worth ₹ 225 Crores would give Ram 10% (as futures are expected to fall by 10%, but Ram having sold futures would gain) i.e. ₹ 22.5 Crores, resulting in nil gain or loss.

Shyam may sell Nifty futures equivalent to beta times value of his portfolio for perfect hedge i.e. he should sell $0.9 \times 150 \text{ Crores} = ₹ 135 \text{ Crores}$ at 4550 levels i.e. $135 \text{ Crores} / (4550 \times 50) = 5934$ contracts approximately.

Revisory Test Paper_Final_Syllabus 2008_June 2013

With markets falling 10%, stock value will fall by 0.9 times 10% i.e. 9% i.e. $9\% \times 150$ Crores or a loss of ₹ 13.5 Crores. Nifty futures which are sold worth ₹ 135 Crores would give Shyam 10% (as futures are expected to fall by 10%, but Shyam having sold futures would gain) i.e. ₹ 13.5 Crores, resulting in nil gains. Shyam may also sell stock X futures equivalent to value of his portfolio for perfect hedge i.e. he should sell 150 Crores at 4550 levels i.e. $150 \text{ Crores} / (4550 \times 50) = 6593$ contracts approximately.

With markets falling 10%, stock value will fall by 0.9 times 10% i.e. $9\% \times 150$ Crores or a loss of ₹ 13.5 Crores. Stock futures which are sold worth ₹ 150 Crores would give Shyam 9% (as stock futures are also expected to fall by 9%, but Shyam having sold futures would gain) i.e. ₹ 13.5 Crores, resulting in nil gains.

Q. 4. (a) Is the 'term structure' the only factor influencing the price of a bond?

(b) Write short note on Exchange Rate Risk.

(c) Capital Allocation and Optimal Portfolio

Assume two Portfolios, A and B, offering expected returns of 20% and 25% respectively. The correlation coefficient of the two portfolios is 0.40. The risks of A and B are given by standard deviations are 20% and 30% respectively. The risk-free asset offers a return of 8%. Find the following :

- (i) In what ratio would you combine the Portfolios A and B so that you have the best possible capital allocation?**
- (ii) What would be the risk and return of such portfolio?**
- (iii) If combined with the risk-free asset what trade-off of the risk and return would be made?**
- (iv) If capital allocation is done with Portfolio A or Portfolio B, do you expected to achieve the same trade off as with the portfolio obtained in (a)?**

Answer 4. (a)

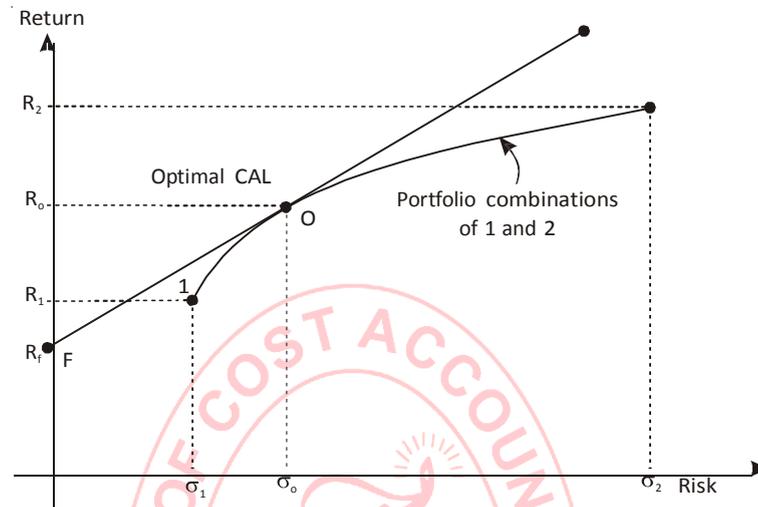
No, there are other factors besides the term structure, that influence the pricing of a bond. These include, for instance, tax regulations (differential tax rates for income and capital gains) that affect the relative valuations of bonds with different cash flows. Again, illiquid bonds trade at a premium relative to liquid bonds of the same residual maturity. Some other characteristics also influence bond valuation. For trades in the same bond conducted on the same day, dispersion in prices could be attributed to transaction costs that vary with the size of the trade, an example of which could be an intra-day effect on account of new developments during the day and expectations about the directionality of the term structure risk, higher is the spread.

Answer 4. (b)

All investors who invest internationally in today's increasingly global investment arena face the prospect of uncertainty in the returns after they convert the foreign gains back to their own currency. Unlike the past when most U.S. investors ignored international investing alternatives, investors today must recognize and understand exchange rate risk, which can be defined as the variability in returns on securities caused by currency fluctuations. Exchange rate risk is sometimes called currency risk. For example, a U.S. investor who buys a German stock denominated in marks must ultimately convert the returns from this stock back to dollars. If the exchange rate has moved against the investor, losses from these exchange rate movements can partially or totally negate the original return earned. Obviously, U.S. investors who invest only in U.S. stocks on U.S. markets do not face this risk, but in today's global environment where investors increasingly consider alternatives from other countries, this factor has become important. Currency risk affects international mutual funds, global mutual funds, closed-end single country funds, American Depository Receipts, foreign stocks, and foreign bonds.

Answer 4. (c)

(a) We have to find the optimal Portfolio O that is a combination of Portfolios A and B. The Portfolio O would be combined with the risk-free asset to yield the best portfolio.



Let proportion of money in Portfolio A be w_1 with $(1 - w_1)$ in Portfolio B. By changing w_1 we obtain various portfolios and the w_1^* is the proportion that provides optimal portfolio. The proportion w_1^* is given by –

$$w_1 = \frac{(R_1 - R_f)\sigma_2^2 - (R_2 - R_f)\rho\sigma_1\sigma_2}{(R_1 - R_f)\sigma_2^2 + (R_2 - R_f)\sigma_1^2 - (R_1 + R_2 + 2R_f)\rho\sigma_1\sigma_2}$$

$$w_1 = \frac{(20 - 8) \times 900 - (25 - 8) \times 0.4 \times 20 \times 30}{(20 - 8) \times 900 + (25 - 8) \times 400 - (20 + 25 + 16) \times 0.4 \times 20 \times 30}$$

$$= \frac{10800 - 4080}{10800 + 6800 - 6960} = \frac{6720}{10640} = 0.6316 \text{ or } 63.16\%$$

and $w_2^* = 1 - w_1^* = 1 - 0.6316 = 0.3684$ or 36.84%

The optimal portfolio that would yield a capital allocation line with maximum slope would be obtained if of the total amount allocated to risky portfolio, 63.16% is invested in Portfolio A and remaining 36.4% in Portfolio B.

(b) The return and risk of the optimal portfolio would be :

Optimal Portfolio Return, $R_0 = w_1 R_1 + w_2 R_2$

$$= 0.6316 \times 20 + 0.3684 \times 25$$

$$= 12.63 + 9.21 = 21.84\%$$

Optimal Portfolio Risk, $\sigma_0^2 = w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \rho \sigma_1 \sigma_2$

$$= 0.6316^2 \times 20^2 + 0.3684^2 \times 30^2$$

$$+ 0.6316 \times 0.3684 \times 0.4 \times 20 \times 30$$

$$= 159.57 + 122.15 + 55.84 = 337.57$$

or $\sigma_0 = 18.37\%$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(c) The slope of the capital allocation line formed with the optimal portfolio and the risk-free asset is :

$$\text{Slope of the CAL} = \frac{R_o - R_f}{\sigma_o} = \frac{21.84 - 8.00}{18.37} = \frac{13.84}{18.37} = 0.75$$

The slope of 0.75 of the CAL implies that for an increase in risk of 1%, the extra return that can be earned is 0.75%.

(d) If capital allocation is done with Portfolio A and the risk-free asset the benefit in return for same increase in the risk will be lesser as given by reduced slope of such CAL. The extra return for an increase of 1% in risk is 0.60%.

$$\begin{aligned} \text{Slope of the CAL with Portfolio A} &= \frac{R_1 - R_f}{\sigma_1} \\ &= (21.84 - 8.00) / 18.37 = 0.75 \end{aligned}$$

Similarly, the CAL using Portfolio B and the risk-free asset would be less than the CAL formed with the optimal portfolio O.

$$\begin{aligned} \text{Slope of the CAL with Portfolio B} &= \frac{R_2 - R_f}{\sigma_2} \\ &= \frac{25.00 - 8.00}{30.00} = \frac{17}{30} = 0.57 \end{aligned}$$

Q. 5. (a) What do you mean by Portfolio rebalancing?

(b) A group of analysts believes that the returns of the portfolios are governed by two vital factors—

- 1. the rate of economic growth and**
- 2. the sensitivity of stock to the developments in the financial markets. The sensitivities of returns with respect to these two factors are denoted by β_1 and beta β_2 respectively.**

Further these analysts believe that returns on three carefully crafted Portfolios A, B and C must be predominantly governed by these two factors alone leaving remaining to some company/ portfolio specific factors. Assume that these three Portfolios A, B, and C are found to have following beta coefficients :

| Portfolio | Expected Return, % | β_1 | β_2 |
|-----------|--------------------|-----------|-----------|
| A | 16.00 | 1.00 | 0.80 |
| B | 25.00 | 1.50 | 1.30 |
| C | 32.00 | 2.00 | 1.50 |

Find out the Arbitrage Pricing Theory (APT) equation governing the returns on the portfolios.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(c) Consider the data for a sample of 4 shares for two years, the base year and year t :

| Share | Price in base year (₹) | Price in year "t" (₹) | Number of outstanding shares (in million) |
|-------|------------------------|-----------------------|---|
| A | 40 | 30 | 3 |
| B | 60 | 75 | 12 |
| C | 20 | 40 | 6 |
| D | 75 | 90 | 5 |

What is the price weighted index, equal weighted index, and value weighted index for year t ?

Answer 5. (a)

Portfolio rebalancing is the action of bringing a portfolio of investments that has deviated away from one's target **asset allocation** back into line. Under-weighted securities can be purchased with newly saved money; alternatively, over-weighted securities can be sold to purchase under-weighted securities. The investments in a portfolio will perform according to the market. As time goes on, a portfolio's current asset allocation can move away from an investor's original target asset allocation. If left un-adjusted, the portfolio could either become too risky, or too conservative. The goal of rebalancing is to move the current asset allocation back in line to the originally planned asset allocation.

Determining an effective rebalancing strategy is a function of the portfolio's assets: their expected returns, their volatility, and the correlation of their returns. For example, a high correlation among the returns of a portfolio's assets means that they tend to move together, which will tend to reduce the need for rebalancing. In addition, the investment time horizon affects the rebalancing strategy. A portfolio with a short time horizon is less likely to need rebalancing because there is less time for the portfolio to drift from the target asset allocation. In addition, such a portfolio is less likely to recover the trading costs of rebalancing.

Answer 5. (b)

Arbitrage Pricing Theory for two factors is

$$R_p = \lambda_0 + \lambda_1\beta_1 + \lambda_2\beta_2$$

Putting the given values in the APT to solve for three unknown variables :

$$\text{For Portfolio A : } 16 = \lambda_0 + \lambda_1 \times 1.00 + \lambda_2 \times 0.80 \quad (1)$$

$$\text{For Portfolio B : } 25 = \lambda_0 + \lambda_1 \times 1.50 + \lambda_2 \times 1.30 \quad (2)$$

$$\text{For Portfolio C : } 32 = \lambda_0 + \lambda_1 \times 2.00 + \lambda_2 \times 1.50 \quad (3)$$

Subtracting (1) from (2)

$$9 = \lambda_1 \times 0.50 - \lambda_2 \times 0.50 \quad (4)$$

Subtracting (1) from (3)

$$16 = \lambda_1 \times 1.00 + \lambda_2 \times 0.70 \quad (5)$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Multiplying (4) with 2, we get

$$18 = \lambda_1 \times 1.00 - \lambda_2 \times 1.00 \quad (6)$$

Subtracting (5) from (6), we get

$$\lambda_2 = 20/3$$

Subtracting the value in (4)

$$9 = 10/3 + \lambda_1 \times 0.50$$

gives $\lambda_1 = 34/3$

Putting the values of λ_1 and λ_2 in (3) we get

$$32 = \lambda_0 + 2 \times 34/3 + 1.50 \times 20/3$$

and $\lambda_0 = -2/3$

APT would then be $R_p = -2/3 + 34/3 \times \beta_1 + 20/3 \times \beta_2$

Answer 5. (c)

| Share | Price in base year (₹) 1 | Price in year t (₹) 2 | Price relative (2/1 × 100) 3 | No. of outstanding shares (in million) 4 | Market capitalisation in the base year (1 × 4) 5 | Market capitalisation in year t (2 × 4) 6 |
|-------|--------------------------------|-----------------------------|------------------------------------|--|--|---|
| A | 40 | 30 | 75 | 3 | 120 | 90 |
| B | 60 | 75 | 125 | 12 | 720 | 900 |
| C | 20 | 40 | 200 | 6 | 120 | 240 |
| D | 75 | 90 | 120 | 5 | 375 | 450 |
| | 195 | 235 | 520 | | 1335 | 1680 |

The price weighted index for year t is $\frac{235}{195} \times 100 = 121$

The equal weighted index for year t is $\frac{520}{400} \times 100 = 130$

The value weighted index for year t is $\frac{1680}{1335} \times 100 = 126$

Q. 6. (a) What is Investor Protection Fund (IPF) at Stock Exchanges?

(b) VHP Company has sold ₹ 1000, 12% perpetual debentures 10 years ago. Interest rates have risen since then, so that debentures of this company are now selling at 15% yeild basis.

Determine the current indicated/expected market price of the debentures. Would you like to buy the debentures for ₹ 700?

Now assume that the debentures of the company are selling at ₹ 825. Moreover, if the 12%, ₹ 1000 debentures are not perpetual & have 8 years to run to maturity, compute the approximate effective yield an investor would earn on his investment.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(c) Your supervisor has asked you to evaluate the relative attractiveness of the stocks of two very similar chemical companies: LCC and AOC. AOC and LCC have June 30 fiscal year ends. You have compiled the data below for this purpose. Use a one-year time horizon and assume the following :

- Real GDP is expected to rise 5 percent;
- S & P 500 expected total return of 20 percent;
- U.S. Treasury bills yield 5 percent; and
- 30-year U.S. Treasury bonds yield 8 percent.

| Particulars | LCC | AOC |
|--|---------|---------|
| Current stock price | \$50.00 | \$30.00 |
| Shares outstanding (Millions) | 10.00 | 20.00 |
| Projected earnings per share (FY 1996) | \$4.00 | \$3.20 |
| Projected dividend per share (FY 1996) | \$0.90 | \$1.60 |
| Projected dividend growth rate | 8% | 7% |
| Stock beta | 1.20 | 1.40 |
| Balance sheet data (million) | | |
| Long term debt | \$100 | \$130 |
| Stockholders' equity | \$300 | \$320 |

- (i) Calculate the value of the common stock of LCC and AOC using the constant-growth DDM. Show your work.
- (ii) Calculate the expected return over the next year of the common stock of LCC and AOC using the CAPM. Show your work.
- (iii) Calculate the internal (implied, normalized, or sustainable) growth rate of Lee and AOC. Show your work.
- (iv) Recommend LCC or AOC for investment. Justify your choice using your answers to A, B, and C and the information in the Table.

Answer 6. (a)

Investor Protection Fund is the fund set up by the Stock Exchanges to meet the legitimate investment claims of the clients of the defaulting members that are not of speculative nature. SEBI has prescribed guidelines for utilisation of IPF at the Stock Exchanges. The Stock Exchanges have been permitted to fix suitable compensation limits, in consultation with the IPF/CPF Trust. It has been provided that the amount of compensation available against a single claim of an investor arising out of default by a member broker of a Stock Exchange shall not be less than ₹ 1 lakh in case of major Stock Exchanges viz., BSE and NSE, and ₹ 50,000/- in case of other Stock Exchanges.

Answer 6. (b)

- (i) For Perpetual Bonds, the value is given as

$$B_0 = \frac{INT}{K_d}$$

Here $INT = 0.12 \times 1000 = 1200$

$K_d = 15\%$

Therefore, at a yield of 15%, acceptable current price would be $= \frac{120}{0.15} = ₹ 800$

Thus we would buy the debentures at ₹ 700, which is ₹ 100 cheaper than the expected market price i.e. ₹ 800.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(ii) Now current market price is ₹ 825 and is redeemable after 8 years. We now need to find the YTM matching these data.

Approximate YTM can be given by

$$= \frac{C + \text{Pro-rated Discount}}{(M+P)/2} = \frac{C + (M-P)/n}{(M+P)/2} = \frac{120 + \frac{175}{8}}{(1000 + 825)/2} = 0.1554 = 15.5\%$$

Where C is the annual coupon payment ; M is the maturity Value of Bond

P is the current price of the Bond

Thus we try to find the exact YTM using discount factor of 16%

[Use approximate YTM formula to find the lower and upper rates for interpolation]

However, in this example, discount factor of 16%, approximates to ₹ 825.

| Year | Events | Cash flow | PV factor 16% | PV of Cash Flows |
|--------------|----------|-----------|---------------|------------------|
| 1-8 | Interest | 120 | 4.3436 | 521.230 |
| 8 | Maturity | 1000 | 0.3050 | 305.000 |
| TOTAL | | | | 826.230 |

Thus we find that for discount rate of 16%, the debenture value approximates to ₹ 825. Therefore YTM ~ 16%, which is the effective yield the investor would look for on his investment.

Answer 6. (c)

(i) Using the constant-growth dividend discount model, $V_0 = D_1 / (k - g)$ For

$$\text{LCC} : V_0 = \$0.90 / (0.10 - 0.08) = \$45.00$$

$$\text{For AOC} : V_0 = \$1.60 / (0.11 - 0.07) = \$40.00$$

(ii) Using the CAPM, the expected return $r = R_f + \beta[E(R_M) - R_f]$ For

$$\text{LCC} : r = 8\% + 1.2(20\% - 8\%) = 22.4\%$$

$$\text{For AOC} : r = 8\% + 1.4(20\% - 8\%) = 24.8\%$$

Alternatively, using CAPM and using the Treasury bill rate as the risk-free rate

$$\text{For LCC} : r = 5\% + 1.2(20\% - 5\%) = 23\%$$

$$\text{AOC} : r = 5\% + 1.4(20\% - 5\%) = 26\%$$

(iii) The internal growth rate is $g = b \times \text{ROE} = [(E - D)/E] \times (E/BV)$

$$\text{For LCC} : BV = \$300/10 = \$30$$

$$\therefore g = [(\$4.00 - \$0.90)/\$4.00] \times (\$4.00/\$30) = 0.775 \times 13.33\% = 10.33\%$$

$$\text{For AOC} : BV = \$320/20 = \$16$$

$$\therefore g = [(\$3.20 - \$1.60)/\$3.20] \times (\$3.20/\$16) = 0.50 \times 20\% = 10.00\%$$

(iv) *Recommendation* : AOC is a more attractive investment than LCC based on the answers to parts A, B, and C and the information provided in the Table.

Justification : Using the constant-growth dividend discount model (DDM), the stock price of AOC is more attractive, at a price of \$30 (well below its DDM value of \$40), than that of LCC. LCC's internal growth rate (computed in part C) is higher than that of AOC, but LCC's higher *PIE* of 12.5 (\$50/\$4) versus 9.4 (\$30/\$3.20) for AOC is not justified by the small difference in growth rates.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Q. 7. (a) A call option on Fag Bearing, a non-dividend paying stock, currently trades for ₹ 4. The expiration date of the option is February 25 of next year. The exercise price of the option is ₹ 45.

- (i) If this is an American option, on what dates can the option be exercised?
 (ii) If this is a European option, on what dates can the option be exercised?
 (iii) Suppose the current price of Fag Bearings is ₹ 35 per share, is this option worthless?

(b) Is the 'zero coupon' yield curve only useful for talking about zero coupon bonds?

(c) A stock is currently trading for ₹ 28. The riskless interest rate is 6 per cent per annum continuously compounded. Estimate the value of a European call option with a strike price of ₹ 30 and a time of expiration of 3 months. The standard deviation of the stock's annual return is 0.44. Apply the BS model.

Answer 7. (a)

- (i) If the option is American, it can be exercised on any date up to and including its expiration on February 25.
 (ii) If the option is European, it can only be exercised on its expiration date, February 25.
 (iii) The option is not worthless. There is a chance that the stock price of Fag Bearings will rise above ₹ 45 sometime before the option's expiration on February 25. In this case, a call option with a strike price of ₹ 45 would be valuable at expiration. The probability of such an event happening is built into the current price of the option.

Answer 7. (b)

No. Besides zero coupon instruments, the ZCYC (Zero Coupon Yield Curve) can be used to price a wide range of securities including coupon paying bonds, derivatives, interest rate forwards and swaps. In arriving at the ZCYC for a coupon bearing instrument, what can be simply done, is stripped the 'n' cash flows into 'n' zero coupon instruments, the first 'n-1' being coupon payments and the 'n'th' being the terminal coupon plus redemption amount.

Answer 7. (c)

| | |
|--|------|
| Spot price of the share (S) | ₹ 28 |
| Exercise price of the call option (E) | 30 |
| Risk-free interest rate (r) | 0.06 |
| Time remaining for expiration (t) = 3 months = 3/12 (year) | 0.25 |
| Volatility of the stock (σ) | 0.44 |

The value of a European call option can be obtained by using the Black-Scholes option pricing model.

$$C = S N(d_1) - E e^{-rt} N(d_2)$$

Computation of a call option essentially requires calculation of three values, viz., d_1 , d_2 and present value of the exercise price $E e^{-rt}$

$$d_1 = \frac{\ln(S/E) + (r + \sigma^2/2)t}{\sigma\sqrt{t}}$$

Substituting values from the information given above we get

$$d_1 = \frac{\ln(28/30) + (0.06 + (0.44)^2/2) \cdot 0.25}{0.44\sqrt{0.25}}$$

$$d_1 = \frac{\ln(0.9333) + (0.06 + 0.968) \cdot 0.25}{0.44 \cdot 0.5}$$

$$\begin{aligned} \ln(0.9333) &= \log_{10}(0.9333) \times 2.3026 \\ &= (\bar{1} + 9700) \times 2.3026 \\ &= (\bar{1} + 0.9700) \times 2.3026 \\ &= -2.3026 + 2.2335 \end{aligned}$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

$$\ln(0.9333) = -0.0691$$

$$d_1 = \frac{-0.0691 + 0.0392}{0.22} = -0.1359$$

$$d_2 = d_1 - \sigma\sqrt{t} = -0.1359 - (0.44) \sqrt{0.25}$$

$$d_2 = -0.3559$$

$$\begin{aligned} \text{and } E e^{-rt} &= 30 e^{-(0.06 \times 0.25)} = 30 e^{-0.015} \\ &= e^{-0.02} (e^{-0.02} = 0.9802 \text{ as per Table A - 7}) \\ &= 30 (0.9802) = 29.406 \end{aligned}$$

The equation of call option looks like $C = 28 N(-0.1359) - 29.406 N(-0.3559)$

The next step is to look up the values of a cumulative standardised normal probability distribution at (-0.1359) and (-0.3559)

$$\begin{aligned} N(-0.1359) &= N(-0.13) - 0.59 [N(-0.13) - N(-0.14)] \\ &= 0.4483 - 0.59 [0.4483 - 0.4443] \\ &= 0.4483 - 0.00236 = 0.4459 \end{aligned}$$

$$\begin{aligned} N(-0.3559) &= N(-0.35) - 0.59 [N(-0.35) - N(-0.36)] \\ &= 0.3632 - 0.59 [0.3632 - 0.3594] \\ &= 0.3632 - 0.00224 = 0.3610 \end{aligned}$$

$$\begin{aligned} C &= 28 (0.4459) - 29.406 (0.3610) \\ &= 12.4852 - 10.6156 = ₹ 1.87 \end{aligned}$$

Thus, the value of European call option is ₹ 1.87

Q. 8. (a) A currency trader working at ONS capital management, expects higher volatility in the foreign exchange market owing to uncertain geopolitical situation. He expects the rupee to either appreciate by 2 per cent or depreciate by 2 per cent in comparison to the US \$ in 30 days time. He assumes equal probability for the two scenarios. The currency quote machine installed at ONS capital management is flashing the following quotes :

| | |
|--|---------------|
| Spot | ₹ 48/US \$ |
| Future rate (for one month) | 48.7650/US \$ |
| Call option (strike price ₹ 48, one month) | 0.8900/US \$ |
| Put option (strike price ₹ 48, one month) | 0.2000/US \$ |

- (i) What strategy should the currency trader adopt?
 (ii) If at the end of one month the spot rate is ₹ 49.35/US \$, what is the return on investments?

(b) Dua Manufacturing (DM) has under consideration refunding of ₹ 2 crore out-standing bonds at ₹ 1,000 par value as a result of recent decline in long-term interest rates. The bond-refunding plan involves issue of ₹ 2 crore of new bonds at the lower interest and the proceeds to call and retire the ₹ 2 crore outstanding bonds. The DM is in 35 per cent tax bracket.

The details of the new bonds are : (i) sale at per value of ₹ 1,000 each, (ii) 11 per cent coupon rate, (iii) 20-years maturity, (iv) flotation costs, ₹ 4,00,000, and (v) a 3-month period of overlapping interest.

DMs outstanding bonds were initially issued 10 years ago with a 30-year maturity and 13 per cent coupon rate of interest. They were sold at ₹ 12 per bond discount from par value with flotation costs amounting to ₹ 1,50,000 and their call at ₹ 1,130.

Assuming 7 per cent after -tax cost of debt, analyse the bond-refunding proposal. Would you recommend it? Why?

Revisory Test Paper_Final_Syllabus 2008_June 2013

Answer 8. (a)

Spot rate = ₹ 48/US \$: the spot rate after 30 days is

For 2 per cent appreciation in the rupee,

$$₹ 48/(1 + 0.02) = ₹ 47.0588/US \$$$

For 2 per cent depreciation in the rupee

$$₹ 48/(1 - 0.02) = ₹ 48.9796/US \$$$

So after 30 days the trader expects the spot rate (settlement rate for option or future) to be either ₹ 47.0588/US \$ or ₹ 48.9796/US \$.

To get benefit from this expectation, the trader cannot use the futures market. Because if the trader takes a long position by buying futures at ₹ 48.7650/US \$, it can earn only if the settlement rate is ₹ 48.9796/US \$, whereas for a settlement rate of ₹ 47.0588 the trader will suffer loss. Similarly, if the trader takes a short position by selling futures, he can earn only if settlement rate is ₹ 47.0588, whereas the will loose if settlement rate is ₹ 48.9796/US \$.

Also, buying only call or only put will not give profit in both expected settlement rate. Appropriate strategy for the trader at ONS capital management will be to buy call and simultaneously also buy put. As call will be providing profit for depreciation in rupees (settlement rate ₹ 48.9796/US \$) and put will be providing profit for appreciation in rupees (settlement rate ₹ 47.0588/US \$).

For a settlement rate of ₹ 49.3500/US \$

$$\begin{aligned} \text{Profit} &= \text{Profit from call option} + \text{Profit from put option} \\ &= \{\text{Max}[(\text{Settlement rate} - \text{Strike rate}), 0] - \text{Call premium}\} + \{\text{Max}[(\text{Strike rate} - \text{Settlement rate}), 0] - \text{Put premium}\} \\ &= \{\text{Max}[\text{₹ } 49.3500/\text{US \$} - \text{₹ } 48.000/\text{US \$}], 0\} - \text{₹ } 0.8900/\text{US \$} + \\ &\quad \{\text{Max}[\text{₹ } 48.000/\text{US \$} - \text{₹ } 49.3500/\text{US \$}], 0\} - \text{₹ } 0.2000/\text{US \$} \\ &= \{\text{₹ } 1.35/\text{US \$} - \text{₹ } 0.89/\text{US \$}\} + \{0 - \text{₹ } 0.2000/\text{US \$}\} = \text{₹ } 0.26/\text{US \$}. \end{aligned}$$

Return on investment

$$\text{Investment in buying a call and a put} = \text{₹ } 0.8900/\text{US \$} + \text{₹ } 0.2000/\text{US \$} = \text{₹ } 1.09/\text{US \$}.$$

So the return on investment = $(0.26/1.09) \times 100 = 23.85$ per cent per month.

Answer 8. (b)

Decision analysis for bond refunding decision

| | |
|---|-------------|
| Present value of annual cashflow savings (Refer working note 2) | |
| ₹ 2,62,450 $\times 10.594$ (PVIF _{7, 20}) | ₹ 27,80,395 |
| Less : Initial investment (Refer working note 1) | 24,21,500 |
| Net present value of refunding | 3,58,895 |

Decision : As the NPV is positive, the proposed bond-refunding is recommended.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Working Notes :

1. Initial investment :

| Particulars | ₹ | ₹ |
|---|-----------|-----------|
| (a) Call premium : | | |
| Before tax [(₹ 1,130 – ₹ 1,000) × 20,000 bonds] | 26,00,000 | |
| Less : Tax (0.35 × ₹ 26,00,000) | 9,10,000 | |
| After-tax cost of call premium | | 16,90,000 |
| (b) Flotation cost of new bond | | 4,00,000 |
| (c) Overlapping interest : | | |
| Before tax [(₹ 0.13 × 3/12 [#] × ₹ 2 crore) | 6,50,000 | |
| Less : Tax (0.35 × ₹ 6,50,000) | 2,27,500 | |
| After-tax cost of overlapping interest | | 4,22,500 |
| (d) Tax savings from unamortised discount on old bond [25/30 [#] × (20,000 bonds × ₹ 12/bond discount) × 0.35 | | (56,000) |
| (e) Tax savings from unamortised flotation cost of old bond (20/30 [#] × ₹ 1,50,000 × 0.35) | | (35,000) |
| | | 24,21,500 |
| [#] 3 months ÷ 12 months | | |
| [#] 20 years maturity ÷ 30 years maturity | | |

2. Annual cash flow savings :

| Particulars | ₹ | ₹ | ₹ |
|---|-----------|-----------|-----------|
| (a) Old bond | | | |
| (i) Interest cost : | | | |
| Before tax (0.13 × ₹ 2 crore) | 26,00,000 | | |
| Less : Tax (0.35 × ₹ 26,00,000) | 9,10,000 | | |
| After tax interest cost | | 16,90,000 | |
| (ii) Tax savings from amortisation of discount [(₹ 2,40,000* ÷ 30) × 0.35] | | (2,800) | |
| (iii) Tax savings from amortisation of flotation cost [(₹ 1,50,000 ÷ 30) × 0.35] | | (1,750) | |
| Annual after-tax debt payment (a) | | | 16,85,450 |
| (b) New bond | | | |
| (i) Interest cost : | | | |
| Before tax (0.11 × 2,00,00,000) | 22,00,000 | | |
| Less : Taxes (0.35 × ₹ 22,00,000) | 7,70,000 | | |
| After tax interest cost | | 14,30,000 | |
| (ii) Tax savings from amortisation of flotation cost [₹ 4,00,000 ÷ 20) × 0.35] | | (7,000) | |
| Annual after tax debt payment (b) | | | 14,23,000 |
| *20,000 bonds × ₹ 12 per bond | | | |
| Annual cash flow savings [(a) – (b)] | | | 2,62,450 |

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Q. 9. (a) Mr. X on 1.7.2010, during the initial offer of some Mutual Fund invested in 10,000 units having face value of ₹ 10 for each unit. On 31.3.2012 the dividend operated by the MF was 10% and Mr. X found that his annualized yield was 153.33%. On 31.12.2012, 20% dividend was given. On 31.3.2013 Mr. X redeemed all his balance of 11,296.11 units when his annualized yield was 73.52%. What are the NAVs as on 31.3.2011, 31.12.2012 and 31.3.2013?

(b) Gentry Motor Inc. a producer of turbine generators, is in this situation :

| | |
|------------------------------------|------------|
| EBIT | ₹ 40 lakh |
| Tax rate (t) | 35% |
| Debt outstanding (D) | ₹ 20 lakhs |
| K_d | 10% K_e |
| | 15% |
| Shares of stock outstanding (Nos.) | 6,00,000 |
| Book value per share | ₹ 10 |

Since Gentry's product market is stable and the company expects no growth, all earnings are paid out as dividends. The debt consists of perpetual bonds.

- (i) What are the Gentry's earning per share (EPS) and its price per share (P_0)?
- (ii) What is Gentry's weighted average cost of capital (K_0)?
- (iii) Gentry can increase its debt by ₹ 80 lakhs, to a total of ₹ 1 crore, using the new debt to buy back and retire some of its shares at the current price. Its interest rate on debt will be 12% (it will have to call and refund the old debt), and its cost of equity will rise from 15% to 17%. EBIT will remain constant. Should Gentry change its capital structure?

Answer 9. (a)

| Date of Investment | Action | NAV | Units held | Return |
|--------------------|-----------------------------------|------|------------|---------|
| 1.7.2008 | Original Purchase | ₹ 10 | 10000 | — |
| 31.3.2009 | Dividend 10% | ? | ? | 153.33% |
| 31.12.2010 | Dividend 20% | ? | ? | — |
| 31.3.2011 | Full Redemption of 11296.11 units | ? | 0 | 73.52% |

Note :

No information on dividend re-investment is given. We assume that dividends are reinvested, because the number of units at redemption has increased, indicating dividends have been re-invested.

As on 31.3.2009, we have Annualized yield of 153.33%. Therefore we have as follows :

$$\text{Annualized Yield} = \frac{(\text{Closing Value} - \text{Opening NAV})}{\text{Original NAV}} \times \frac{12}{n} \times 100$$

For 9 months period from the beginning :

$$\text{Annualized Yield} = \frac{(\text{Closing Value} - 10)}{10} \times \frac{12}{9} \times 100 = 153.33$$

Solving we get, Closing Value = **NAV as on 31.3.2009 = ₹ 21.50** (dividend of 10%)

Now, we have 10% declaration of dividend on 31.3.2009. For 10000 units @ 10% o FV of ₹ 10, Re. 1 would be paid i.e. ₹ 10000. This converted at ₹ 21.50 would allot 465.11 units to Mr. X. His total units would then be 10465 .11 units.

Further payment of 20% dividend on 31.12.2010 means ₹ 20930.22 (10465.11 × ₹ 2) would be used to issue further units to Mr. X in such a way that total units would be equal to 11296.11 units (the final balance); i.e. 11296.11-10465.11 = 831 units allotment on 31.12.2010. If 831 units were issued for ₹ 20930.22, the **NAV as on 31.12.2010** should have been = ₹ 20930.22/831 = ₹ 25.1868.

Now we are given Annualized Yield as on 31.3.2011 = 73.52%. Using the above formula we find the closing NAV as on 31.3.2011.

$$\text{Annualized Yield} = 73.52 = \frac{\text{Closing NAV} - 25.1868}{25.1868} \times \frac{12}{3} \times 100$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

i.e. closing NAV as on **31.3.2011** should be = ₹ 29.8161

Answer 9. (b)

$$K_d = I(1-t)$$

$$10\% = I(1-0.35)$$

$$\therefore \text{Interest (i)} = 15.3846\%$$

(i) Calculation of Earning Per Share and Price Per Share

| Particulars | ₹ |
|------------------------------------|-----------|
| EBIT | 40,00,000 |
| Interest (20,00,000 × 15.3846/100) | 3,07,692 |
| EBT (Earnings before Tax) | 36,92,308 |
| Less : Taxes (35%) | 12,92,308 |
| PAT (Profit after Tax) | 24,00,000 |

$$\text{EPS} = \frac{\text{₹ } 24,00,000}{6,00,000} = \text{₹ } 4.00$$

$$K_e = \frac{E}{P_0} \quad \text{or, } 0.15 = \frac{4}{P_0} = 26.67$$

(ii) Calculation of Weighted Average Cost of Capital (K_o) (₹)

| | |
|--------------------------|-----------|
| Equity (6,00,000 × ₹ 10) | 60,00,000 |
| Debt | 20,00,000 |
| Total capital | 80,00,000 |

$$K_o = (K_e \times W_1) + (K_d \times W_2)$$

$$= (0.15 \times 0.75) + (0.10 \times 0.25) = 0.1375 \text{ or } 13.75\%$$

(iii) (₹)

| | |
|-------------------------------|-----------|
| EBIT | 40,00,000 |
| Interest (1,00,00,000 × 0.12) | 12,00,000 |
| EBT | 28,00,000 |
| Less : Taxes (35%) | 9,80,000 |
| PAT | 18,20,000 |

Shares Bought and Retired

$$\Delta N = \text{Debt}/P_0 = \text{₹ } 80,00,000/26.67 = 2,99,963 \text{ shares}$$

New Outstanding Shares

$$N = N_0 - \Delta N = 6,00,000 - 2,99,963 = 3,00,037$$

$$\text{New EPS} = 18,20,000/3,00,037 = \text{₹ } 6.07$$

$$\text{New Price Per Share (P}_0) = 6.07/0.17 = \text{₹ } 35.71$$

Results :

(a) New EPS ₹ 6.07 as against existing EPS of ₹ 4.00

(b) New price per share ₹ 35.71 as against existing price per share of ₹ 26.67

Therefore, Gentry should change its capital structure.

Q. 10. (a) What do you mean by ETF (Exchange Traded Funds)? State in brief the applications of it.

(b) A firm has a bond outstanding ₹ 3,00,00,000. The bond has 12 years remaining until maturity, has a 12.5% coupon and is callable at ₹ 1,050 per bond; it had flotation costs of ₹ 4,20,000, which are being amortised at ₹ 30,000 annually. The flotation costs for a new issue will be ₹ 9,00,000 and the current interest rate will be 10%. The after tax cost of the debt is 6%. Should the firm refund the outstanding debt? Show detailed workings. Consider corporate income-tax rate at 50%.

Revisory Test Paper_Final_Syllabus 2008_June 2013

Answer 10. (a)

Exchange Traded Funds (ETFs) are just what their name implies: baskets of securities that are traded, like individual stocks, on an exchange. Unlike regular open-end mutual funds, ETFs can be bought and sold throughout the trading days, like any stock.

The concept of ETF first came into existence in the USA in 1993. It took several years to attract public interest. But once it was done, the volumes took off with a retaliation. Most ETFs charge lower annual expenses than index mutual funds. However, as with stocks, one must pay a brokerage to buy and sell ETF units, which can be a significant drawback for those who trade frequently or invest regular sums of money.

The funds rely on an arbitrage mechanism to keep the prices at which they trade roughly in line with the net asset values of their underlying portfolios. For the mechanism to work, potential arbitragers need to have full and timely knowledge of a fund's holdings.

Applications of ETF are :

- (i) Managing Cash Flows - Investment and fund managers, who see regular inflows and outflows, may use ETFs because of their liquidity and their capability to represent the market.
- (ii) Diversifying Exposure - If an investor is not aware about the market mechanism and does not know which particular stock to buy but likes the overall sector, investing in shares tied to an index or basket of stocks, provides diversified exposure and reduces risk.
- (iii) Efficient Trading - ETFs provide investors a convenient way to gain market exposure viz. an index that trades like a stock. In comparison to a stock, an investment in an ETF index product provides a diversified exposure to the market
- (iv) Shorting or Hedging - Investors who have a negative view on a market segment or specific sector may want to establish a short position to capitalize on that view. ETFs may be sold short against long stock holdings as a hedge against a decline in the market or specific sector.
- (v) Filling Gaps - ETFs tied to a sector or industry may be used to gain exposure to new and important sectors. Such strategies may also be used to reduce an overweight or increase an underweight sector.
- (vi) Equitising Cash - Investors having idle cash in their portfolios, may want to invest in a product tied to a market benchmark. An ETF, is a temporary investment before deciding which stocks to buy or waiting for the right price.

Answer 10. (b)

- (i) Calculation Present Value of Saving in Interest by Issue of New Bonds Replacing Old Bonds

| | | |
|--|--|---------------|
| Interest on bond outstanding p.a. | $= 3,00,00,000 \times 12.5 / 100$ | = ₹ 37,50,000 |
| Interest on new bonds p.a | $= 3,00,00,000 \times 10 / 100$ | = ₹ 30,00,000 |
| Savings in interest by issue of new bonds | $= (37,50,000 - 30,00,000) (1 - 0.50)$ | |
| P. V. of savings in interest (@ 6% for 12 years) | $= 3,75,000 \times 8.384$ | = ₹ 31,44,000 |
- (ii) Saving of Call Premium

| | | |
|--|---|--------------|
| Call premium per bond = $\frac{\text{Callable value} - \text{Face value}}{50}$ | $= 1,050 - 1,000$ | = ₹ 50 |
| or = $\frac{50}{1,000} \times 100 = 50\%$ | | |
| Total call premium | $= (3,00,00,000 \times 5 / 100) (1 - 0.50)$ | = ₹ 7,50,000 |
- (iii) Floatation Costs

The floatation cost of issue of new callable bonds to mobilize ₹ 300 lakhs will be ₹ 9,00,000.

| | | |
|--|--------------------------------|--------------|
| Amortisation of floatation cost p.a. (after tax) | $= (9,00,000 / 12) (1 - 0.50)$ | = ₹ 3,14,000 |
| P. V. of floatation cost amortised (after tax) (@6% p.a. for 12 years) | $= 3,14,000 \times 8.384$ | = ₹ 3,14,400 |
- (iv) P. V. of Tax Saving by Amortisation of Outstanding Bonds

| | | |
|--|-------------------------------------|--------------|
| P. V. of immediate tax savings | | = ₹ 1,80,000 |
| P. V. of tax saving if outstanding debt is continued | $= 30,000 \times 0.50 \times 8.384$ | = ₹ 1,25,760 |
| P. V. of net tax saving | $= 1,80,000 - 1,25,760$ | = ₹ 54,240 |

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Calculation of Total Net Savings by Replacing Outstanding Bonds with New Issue of Callable Bonds
(₹)

| | | |
|--|----------|-----------|
| P. V. of interest savings | | 31,44,000 |
| P. V. of tax savings on floatation cost amortised of old bonds | | 3,14,400 |
| P. V. of tax savings by amortisation of old debt | | 54,240 |
| | | 35,12,640 |
| Less : Cash outflow on floatation cost | 9,00,000 | |
| Call premium | 7,50,000 | 16,50,000 |
| P. V. of net savings if outstanding bonds are replaced with callable bonds | | 18,62,640 |

Analysis – It is suggested to replace the outstanding bonds with new debt by issue of callable bonds.

Q. 11. (a) What is an Index and Index Future?

(b) Why are indices important?

(c) X Co. Ltd. invested on 1.4. 2011 in certain equity shares as below :

| Name of Co. | No. of shares | Cost (₹) |
|-------------|--------------------|----------|
| M Ltd. | 1,000 (₹ 100 each) | 2,00,000 |
| N Ltd. | 500 (₹ 10 each) | 1,50,000 |

In September, 2011, 10% dividend was paid out by M Ltd. and in October, 2011, 30% dividend paid out by N Ltd. On 31.3.2012 market quotations showed a value of ₹ 220 and ₹ 290 per share for M Ltd. and N Ltd. respectively.

On 1.4.2012, investment advisors indicate (a) that the dividends from M Ltd. and N Ltd. for the year ending 31.3.2013 are likely to be 20% and 35%, respectively and (b) that the probabilities of market quotations on 31.3.2013 are as below :

| Probability factor | Price/share of M Ltd. | Price/share of N Ltd. |
|--------------------|-----------------------|-----------------------|
| 0.2 | 220 | 290 |
| 0.5 | 250 | 310 |
| 0.3 | 280 | 330 |

You are required to :

- (i) Calculate the average return from the portfolio for the year ended 31.3.2012;
- (ii) Calculate the expected average from the portfolio for the year 2012-13; and
- (iii) Advise X Co. Ltd., of the comparative risk in the two investments by calculating the standard deviation in each case.

Answer 11. (a)

An Index is a number used to represent the changes in a set of values between a base time period and the current time. A stock index represents change in the value of a set of stocks which constitute the index over a base year.

An index future is a derivative whose value is dependent on the value of the underlying asset (e.g. BSE Sensex, S&P CNX NIFTY). While trading on index futures, an investor is basically buying and selling the basket of securities comprising an index in their relative weights. Unlike commodity and other futures contracts, Index Future contracts are settled in cash.

Answer 11. (b)

By looking at an index we know how the market is faring. The index is a lead indicator of how the overall portfolio will fare. Owing to direct applications in finance, in the form of index funds and index derivatives, in recent years, indices have gained more popularity. Index funds are funds which passively 'invest in the index'. Index derivatives allow people to cheaply alter their risk exposure to an index (which is called hedging) and to implement forecasts about index movements (which are called speculation). Using index derivatives, as hedging, has become a central part of risk management in the modern economy. These applications are now a multi-trillion dollar industry worldwide, and they are critically linked up to market indices. Finally, indices serve as a benchmark for measuring the performance of fund managers. For e.g., an all-equity fund, should obtain returns like the overall stock market index. A 50:50 debt: equity fund should obtain returns close to those obtained by an investment of 50% in the index and 50% in fixed income.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 11. (c)

(i) Calculation of Average Return from the Portfolio for the year ended 31.3.2012 (₹ / share)

| Particulars | M Ltd. | N Ltd. |
|---------------------------------------|--------|---------|
| Dividend received during the year (a) | 10 | 3 |
| Capital gain / (loss) by 31.3.2012 | | |
| Market value by 31.3.2012 | 220 | 290 |
| Cost of investment | 200 | 300 |
| Capital gain / (loss) (b) | 20 | (10) |
| Yield per share (a) + (b) | 30 | (7) |
| Return per share (%) | 15% | (2.33%) |
| Weight in the portfolio | 57% | 43% |
| Weight return | 8.55% | (1.00%) |

Weight average return = 8.55 + (- 1.00) = 7.55%

(ii) Calculation of Expected Average Return from the Portfolio for the year 2012-13 (₹ / shares)

| Particulars | M Ltd. | N Ltd. |
|---|--------|--------|
| Expected dividend | 20 | 3.5 |
| Capital gain by 31.3.2013 : | | |
| [(220 × 0.2) + (250 × 0.5) + (280 × 0.3) – 220] | 33 | – |
| [(220 × 0.2) + (310 × 0.5) + (330 × 0.3) – 290] | – | 22 |
| Yield per share | | |
| Market value on 1.4.2010 (base value) | 220 | 290 |
| Return per share (%) | 24.09% | 8.79% |
| Weight of portfolio (1000 × 220); (500 × 290) | 60.3% | 39.7% |
| Weighted return (%) | 14.53% | 3.49% |

Expected weighted average return for 2012-13 = 14.53 + 3.49 = 18.02%

(iii) Analysis of Comparative Risk in two investments by calculating the Standard Deviation in each case
Standard Deviation of Returns in M Ltd. Investment

| Expected market value | Expected gain | Expected dividend | Expected yield | Deviations | Square of deviations | Probability factor | Square of deviations x Probability |
|-----------------------|---------------|-------------------|----------------|------------|----------------------|--------------------|------------------------------------|
| 220 | 0 | 20 | 20 | –33 | 1089 | 0.2 | 217.80 |
| 250 | 30 | 20 | 50 | –3 | 9 | 0.5 | 4.50 |
| 280 | 60 | 20 | 80 | 27 | 729 | 0.3 | 218.70 |
| | | | | | | | 441.00 |

Standard deviation = $\sqrt{441} = 21$

Standard Deviation of Returns in N Ltd. Investment

| Expected market value | Expected gain | Expected dividend | Expected yield | Deviations | Square of deviations | Probability factor | Square of deviations x Probability |
|-----------------------|---------------|-------------------|----------------|------------|----------------------|--------------------|------------------------------------|
| 290 | 0 | 3.5 | 3.5 | –22 | 484 | 0.2 | 96.80 |
| 310 | 20 | 3.5 | 23.5 | –2 | 4 | 0.5 | 2.00 |
| 330 | 40 | 3.5 | 43.5 | 18 | 324 | 0.3 | 97.20 |
| | | | | | | | 196.00 |

Standard deviation = $\sqrt{196} = 14$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Analysis – The standard deviation of returns in investments in M Ltd. is more than investment in N Ltd. Hence, in investments in M Ltd. shares is more risky than in N Ltd.

Q. 12. (a) The rates of return on the security of Company P and market portfolio for 10 periods are given below :

| Period | Return of Security P (%) | Return on Market Portfolio (%) |
|--------|--------------------------|--------------------------------|
| 1 | 20 | 22 |
| 2 | 22 | 20 |
| 3 | 25 | 18 |
| 4 | 21 | 16 |
| 5 | 18 | 20 |
| 6 | -5 | 8 |
| 7 | 17 | -6 |
| 8 | 19 | 5 |
| 9 | -7 | 6 |
| 10 | 20 | 11 |

- (i) What is the beta of Security P?
 (ii) What is the characteristic line for Security P?

(b) XYZ Ltd. has substantial cash flow and until the surplus funds are utilized to meet the future capital expenditure, likely to happen after several months, are invested in a portfolio of short-term equity investments, details for which are given below :

| Investment | No. of share | Beta | Market price per share (₹) | Expected dividend yield |
|------------|--------------|------|----------------------------|-------------------------|
| I II | 60,000 | 1.16 | 4.29 | 19.50% |
| III | 80,000 | 2.28 | 2.92 | 24.00% |
| IV | 1,00,000 | 0.90 | 2.17 | 17.50% |
| | 1,25,000 | 1.50 | 3.14 | 26.00% |

The current market return is 19% and risk free rate is 11%.

Required :

- (i) Calculate the risk of XYZ's short-term investment portfolio relative to that of the market;
 (ii) Whether XYZ should change the composition of its portfolio.

Answer 12. (a)

(i)

| Period | R _x | R _m | (R _x - \bar{R}_x) | (R _m - \bar{R}_m) | (R _x - \bar{R}_x)(R _m - \bar{R}_m) | (R _m - \bar{R}_m) ² |
|--------|---------------------|---------------------|---------------------------------|---------------------------------|--|--|
| 1 | 20 | 22 | 5 | 10 | 50 | 100 |
| 2 | 22 | 20 | 7 | 8 | 56 | 64 |
| 3 | 25 | 18 | 10 | 6 | 60 | 36 |
| 4 | 21 | 16 | 6 | 4 | 24 | 16 |
| 5 | 18 | 20 | 3 | 8 | 24 | 64 |
| 6 | -5 | 8 | -20 | -4 | 80 | 16 |
| 7 | 17 | -6 | 2 | -18 | -36 | 324 |
| 8 | 19 | 5 | 4 | -7 | -28 | 49 |
| 9 | -7 | 6 | -22 | -6 | 132 | 36 |
| 10 | 20 | 11 | 5 | -1 | -5 | 1 |
| | 150 = $\sum R_x$ | 120 = $\sum R_m$ | | | 357 = $\sum (R_x - \bar{R}_x)(R_m - \bar{R}_m)$ | 706 = $\sum (R_m - \bar{R}_m)^2$ |

Revisionary Test Paper_Final_Syllabus 2008_June 2013

$$\bar{R}_x = \frac{\sum R_x}{n} = \frac{150}{10} = 15 ; \quad \bar{R}_m = \frac{\sum R_m}{n} = \frac{120}{10} = 12$$

$$\sigma_m^2 = \frac{\sum (R_m - \bar{R}_m)^2}{n-1} = \frac{706}{9} = 78.44$$

$$\text{Cov}_{xm} = \frac{\sum (R_x - \bar{R}_x)(R_m - \bar{R}_m)}{n-1} = \frac{357}{9} = 39.67$$

$$\beta_x = \frac{\text{Cov}_{xm}}{\sigma_m^2} = \frac{39.67}{78.44} = 0.506$$

(ii) $Y = 15, x = 12$

$$Y = \alpha + \beta x$$

$$15 = \alpha + (0.506 \times 6)$$

$$a = 15 - (0.506 \times 12) = 8.928\%$$

Characteristic Line for Security P $= \alpha + (\beta \times R_m)$

Where R_m = Expected return on market index

\therefore Characteristic Line for Security P $= 8.928 + 0.506R_m$

Answer 12. (b)

(i) Calculation of risk of XYZ's short-term investment portfolio relative to that of the market. Computation of Return of Portfolio

| Investment | No. of shares | Market price (₹) | Market value (₹) | Dividend yield (%) | Dividend (₹) |
|------------|---------------|------------------|------------------|--------------------|--------------|
| I | 60,000 | 4.29 | 2,57,400 | 19.5 | 50,193 |
| II | 80,000 | 2.92 | 2,33,600 | 24.0 | 56,064 |
| III | 1,00,000 | 2.17 | 2,17,000 | 17.5 | 37,975 |
| IV | 1,25,000 | 3.14 | 3,92,500 | 26.0 | 1,02,050 |
| | | | 11,00,500 | | 2,46,282 |

Return of the portfolio = $(\text{₹ } 2,46,282 / \text{₹ } 11,00,500) \times 100 = 22.38\%$

Calculation of Beta of Portfolio

| Investment | No. of shares | Market price (₹) | Market value (₹) | Composition | Beta | Weighted Beta |
|------------|---------------|------------------|------------------|-------------|------|---------------|
| I | 60,000 | 4.29 | 2,57,400 | 0.2339 | 19.5 | 0.271 |
| II | 80,000 | 2.92 | 2,33,600 | 0.2339 | 24.0 | 0.484 |
| III | 1,00,000 | 2.17 | 2,17,000 | 0.2339 | 17.5 | 0.177 |
| IV | 1,25,000 | 3.14 | 3,92,500 | 0.2339 | 26.0 | 0.535 |
| | | | 11,00,500 | 1.0000 | | 1.467 |

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Beta of the Portfolio = 1.467

Market Risk Implicit

$$0.2238 = 0.11 + \beta (0.19 - 0.11)$$

$$0.2238 = 0.11 + \beta 0.08$$

$$\beta 0.08 = 0.2238 - 0.11$$

$$\beta = 0.1138/0.08 = 1.423$$

The market implicit beta is 1.423 whereas the portfolio beta is 1.467. It is implied that the portfolio is marginally risky as compared to the market.

(ii) Whether XYZ Ltd. should change the composition of its portfolio

Expected return (R_i) = $R_f + \beta (R_m - R_f)$ Calculation of

Expected Return of Investment I = $0.11 +$

$$1.16 (0.19 - 0.11) = 20.28\%$$

$$\text{Investment II} = 0.11 + 2.28 (0.19 - 0.11) = 29.24\%$$

$$\text{Investment III} = 0.11 + 0.90 (0.19 - 0.11) = 18.20\%$$

$$\text{Investment IV} = 0.11 + 1.50 (0.19 - 0.11) = 23\%$$

| Intestment | Expected return (%) | Dividend yield (%) | Change in composition needed or not |
|------------|---------------------|--------------------|-------------------------------------|
| I II | 20.28 | 19.50 | Reduce proportion |
| III | 20.24 | 24.00 | Reduce proportion |
| IV | 18.28 | 17.50 | Reduce proportion |
| | 23.28 | 26.00 | Increase proportion |

In case of Investment IV, the dividend yield is more than the expected return and its proportion in total portfolio to be increased and it the rest of investments the proportion of investment to be reduced.

Q. 13. (a) You as a dealer in foreign exchange have the following position in Swiss Francs on 31st October, 2012 :

| | Sw. Fcs. |
|--------------------------------------|----------|
| Balance in the Nostro A/c credit | 1,00,000 |
| Opening position overbought | 50,000 |
| Purchased a bill on Zurich | 80,000 |
| Sold forward TT | 60,000 |
| Forward purchased contract cancelled | 30,000 |
| Remitted by TT | 75,000 |
| Draft on Zurich cancelled | 30,000 |

What steps would you like, if you are required to maintain a credit balance of Sw. Fcs. 30,000 in the Nostro A/c and keep as overbought position on Sw. Fcs. 10,000?

(b) An investor buys the stocks of Hindustan Lever Ltd. (HLL) worth ₹ 20 lakh due to its very strong fundamentals. However, the market in general is considered to remain weak for about the next three months. The beta of HLL is 1.2 and the current value of NIFTY is 2250 and 3-m futures is selling at 2310. Answer the following :

- How can the investor hedge himself against the expected fall in the market?
- Analyse his position (a) if the market falls by 10% in 3 months and HLL drops to ₹ 178 from ₹ 200 (b) if the market registers a rise of 6% and HLL rises to ₹ 215 from ₹ 200.
- Given the standard deviations of the market as 12% and HLL as 18%, what is the risk of unhedged portfolio?

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Swiss Francs Currency Position

| Particulars | Purchase of Sw. Fcs. | Sale of Sw. Fcs. |
|---|-------------------------|---------------------|
| Opening position (over bought) | 50,000 | – |
| Bill purchased on zurich | 80,000 | – |
| Sold forward TT | – | 60,000 |
| Cancellation of forward purchase contract | – | 30,000 |
| Remitted by TT | – | 75,000 |
| Draft on zurich cancelled | 30,000 | – |
| | <u>1,65,000</u> | <u>1,65,000</u> |
| Closing balance (over sold) | 5,000 | – |
| | <u>1,65,000</u> | <u>1,65,000</u> |

Nostro A/c (cash position)

(Sw. Fcs.)

| Particulars | Debit | Credit |
|--------------------------|-----------------|-----------------|
| Opening balance | – | 1,00,000 |
| TT sales | 75,000 | – |
| | 75,000 | 1,00,000 |
| Closing balance (credit) | 25,000 | – |
| | <u>1,00,000</u> | <u>1,00,000</u> |

Steps to be taken :

- (a) The dealer is required to buy spot TT Sw. Fcs. 5,000. This will increase the credit balance is Nostro A/c to Sw. Fcs. 30,0000.
- (b) This will reduce the over sold position to nil.
- (c) The dealer intends to keep Sw. Fcs. 10,000 over bought position. It requires to buy forward Sw. Fcs. 10,000.

Answer 13. (b)

1. One option for the investor was to wait for three months and then buy. He runs the risk of rise in prices of the share of HLL after 3 months. With stock index futures available, he does not need to defer the purchase and take the risk of rise in prices. A better strategy would be to buy the share now; and to protect against the risk of falling market, take a short position in 3-m futures. Since beta of HLL is 1.2 (implies a fall of 1 % in market will result in 1.2% decline in stock value), the futures position must be 1.2 times the position in physical market. Therefore, the investor takes the following steps :

- Buys stock worth Rs 20 lakh due to strong fundamentals, and
 - Sells 3-m futures worth Rs 24 lakh (1.2 x 20 lakh) to insulate against market risk.
- Nos. of shares of HLL = 20,00,000 / 200 = 10,000

$$\begin{aligned}
 \text{Nos. of futures contract sold} &= \frac{\text{Value to be hedge}}{\text{Value of 1 futures contract}} \\
 &= \frac{24,00,000}{200 \times 2310} \\
 &= 5.19 \text{ (Rounded, 5 contracts)}
 \end{aligned}$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

2. (a) Market falls by 10% to 2025 from 2250 and HLL falls to ₹ 178 :

| | |
|-----------------------------|-------------------------------|
| Selling price of futures | = 2310 |
| Purchase price of futures | = 2025 |
| Gain in futures market | = 285 |
| Gain in position of futures | = $5 \times 200 \times 285$ |
| | = ₹ 2,85,000 |
| Loss on HLL 10,000 shares | = $(200 - 178) \times 10,000$ |
| | = ₹ 2,20,000 |
| Net Gain | = ₹ 65,000 |

If the investor was unhedged, his loss would be ₹ 2,20,000

- (b) Market rises by 6% to 2385 from 2250 and HLL rises to ₹ 215 :

| | |
|-----------------------------|---------------------------------------|
| Selling price of futures | = 2310 |
| Purchase price of futures | = 2385 |
| Loss in futures market | = 75 |
| Loss in position of futures | = $5 \times 200 \times 75 = ₹ 75,000$ |
| Gain on HLL 10,000 shares | = $(215 - 200) \times 10,000$ |
| | = ₹ 1,50,000 |
| Net gain | = ₹ 75,000 |

If the investor was unhedged his gain would be ₹ 1,50,000

3. If the investor remained unhedged, he would carry the entire risk of HLL of 18%. With hedged position in futures, the amount of variance reduction is :

$$\beta^2 \sigma_m^2 = (1.2)^2 \times (12)^2 = 207.36 \text{ or standard deviation} = 14.4\%$$

$$\begin{aligned} \text{Residual variance} &= (18)^2 - \beta^2 \sigma_m^2 = (18)^2 - (1.2)^2 \times (12)^2 \\ &= 116.64 \text{ or } 10.8\% \end{aligned}$$

Hedged portfolio will reduce the risk of the asset from 18% to 10.8%.

Q. 14. (a) Eros Plc and Atlas Plc are two competing and growing firms in Britain catering to the European markets for supplies of office needs. Both the firms are expanding rapidly and in order to fund the growth, are exploring for raising debt from the market.

Eros Plc can mobilize funds at 5.40% in the fixed rate market while in the floating rate market it can do so at LIBOR + 50 bp. Atlas Plc can raise funds at 6.3% on fixed rate basis and at LIBOR + 70 bp in the floating rate market.

Eros Plc is wanting to raise money on floating rate basis, as it expects a fall in the interest rate structure. Contrary to Eros Plc, Atlas Plc is convinced of rise in the interest rates in future, and therefore wants to raise funds on fixed rate basis.

HSBC Bank has advised them to raise money in the markets of opposite choice and then enter into a swap through them by paying 10 bp each.

(i) Show how the swap can benefit both the firms and to what extent?

(ii) If the bank is involved as intermediary and wants 10 bp from each of the firm, with Eros Plc wanting 60% of the remaining benefit, what would be the cost of funds for each?

(iii) What function would the bank discharge as intermediary?

(b) Write short note on diffusion index.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 14. (a)

(i) The position of the two firms in the two markets is as follows :

| | Fixed rate market | Floating Rate market |
|----------------------|-------------------|----------------------|
| Eros Plc | 5.40% | LIBOR + 50 bp |
| Atlas Plc | 6.30% | LIBOR + 70 bp |
| Advantage – Eros Plc | 90 bp | 20 bp |

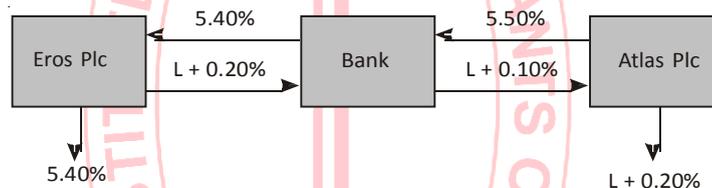
Comparative advantage, i.e., the difference of the two absolute advantages is 70 bp. The comparative advantage can be exploited by the two firms by arranging a swap between them. If the advantage of 70 bp is to be shared equally, the cost of funds for each of them can come down by 35 bp.

(ii) With the bank fixing its earnings at 20 bp (10 bp from each of the party), the comparative advantage that can be exploited by Eros Plc an Atlas Plc reduces to 50 bp. As agreed between the two Eros plc would avail the benefit of 30 bp leaving the remaining 20 bp for Atlas Plc.

Flowing cash flow structure may be formed under the swap :

- Eros Plc would access the fixed rate market mobilizing funds at 5.40%
Under the swap, it would receive fixed 5.40% from the bank and pay floating $L + 20$ bp to the bank.
- Atlas Plc would access the floating rate market mobilizing funds at $L + 70$ bp.
Under the swap, it would pay fixed 5.50% to the bank and receive floating $L + 10$ bp from the bank.

Swap arrangement is shown in the given diagram.



After the swap, the cost of funds for each firm would be as follows :

| | Eros Plc | Atlas Plc |
|------------------------------|-------------|----------------|
| Payment to the market | 5.40% | $L + 70$ bp |
| Payment to bank under swap | $L + 20$ bp | 5.50% |
| Receipt from bank under swap | $- 5.40\%$ | $-(L + 10$ bp) |
| Cost of funds with swap | $L + 20$ bp | 6.10% |
| Cost of funds without swap | $L + 50$ bp | 6.30% |
| Benefit of swap | 30 bp | 20 bp |

(iii) The role performed by the bank under the swap would be to assume the counter-party risk. In case Eros Plc and Atlas Plc enter into the swap directly both would assume risk of interest payment on each other.

The environment after the swap would be favourable to one and unfavourable to the another leaving scope or default. With the bank in between, both parties are assured of cash flows at specified intervals.

Answer 14. (b)

Diffusion Index : It is a measure of the percentage of stocks that have advanced in price or are showing a positive momentum over a defined period. It is used in the technical analysis of stocks.

It can also be said as a measure of the breadth of a move in any of the Conference Boards Business Cycle Indicators (BCI), showing how many of an indicators components are moving together with the overall indicator index.

It is one of the many different tools used by technical analysts to increase the probability of picking- winning stocks. The diffusion index can help an economist or trader interpret any of the composite indexes of the BCI more accurately - the diffusion index breaks down the indexes and analyzes the components separately, exhibiting the degree to which they are moving in agreement with the dominant direction of the index.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Q. 15. (a) Ritesh holds a well diversified portfolio of stock in XYZ Group. During the last 5 years, returns on these stock have averaged 20% per year and had a standard deviation of 15%. He is satisfied with the yearly availability of his portfolio and likes to reduce its risk without affecting overall returns. He approaches you for help in finding an appropriate diversification medium. After a lengthy review of alternatives, you conclude - (i) future average returns and volatility of returns on his current portfolio will be the same as he has historically expected; and (ii) to provide a quarter degree of diversification in his portfolio, investment could be made in stocks of the following groups :

| Groups | Expected returns | Co-relation of returns with XYZ Group | Standard deviation |
|--------------|------------------|---------------------------------------|--------------------|
| Rekha Ltd. | 20% | + 1.0 | 15% |
| Tina Ltd. | 20% | - 1.0 | 15% |
| Bipasha Ltd. | 20% | + 0.0 | 15% |

(i) If Ritesh invests 50% of his funds in Rekha Ltd. and leaves the remainder in XYZ Group, would this affect both his expected returns and his risk? Why?

(ii) If Ritesh invests 50% of his funds in Tina Ltd. and leaves the remainder in XYZ Group, how would this affect both his expected return and his risk? Why?

(iii) What should Ritesh do? Indicate precise portfolio weightage.

(b) A sugar mill in Uttar Pradesh is expected to produce 100 MT of sugar in the month of April. The current price today (in the month of February) is ₹ 22 per kg. April futures contract in sugar due on 20 April is trading at ₹ 25 per kg.

The sugar mill apprehends that a lesser price than ₹ 25 per kg will prevail in April due to the excessive supply expected at that time. How can the sugar mill hedge its position against the anticipated decline in sugar prices in April?

Answer 15. (a)

As the expected return of existing portfolio as well as new securities are same, there will not be any change in the return level. However, the portfolio risk, σ would be as follows :

$$\sigma_p = \sqrt{W_X^2 \sigma_X^2 + W_Y^2 \sigma_Y^2 + 2W_X W_Y \sigma_X \sigma_Y \sigma_{XY}}$$

$$\sigma_{XR} = \sqrt{(0.5)^2 (15)^2 + (0.5)^2 (15)^2 + 2(0.5)(0.5)(15)(15)(1)}$$

$$\sigma_{XR} = \sqrt{56.25 + 56.25 + 112.5}$$

$$\sigma_{XR} = \sqrt{225} = 15$$

Portfolio of XYZ and Tina

$$\sigma_{XT} = \sqrt{(0.5)^2 (15)^2 + (0.5)^2 (15)^2 + 2(0.5)(0.5)(15)(15)(-1)}$$

$$\sigma_{XT} = \sqrt{56.25 + 56.25 - 112.5}$$

$$\sigma_{XT} = \sqrt{0}$$

- (i) Risk and return of XYZ portfolio are the same as those of Rekha portfolio and the correlation coefficient is 1.0. So, there is no diversification gain.
- (ii) Return would remain at 20% but risk would fall to zero since $r = -1.0$
- (iii) Invest 50/50 in XYZ Group portfolio and Group Tina Ltd. portfolio.

Answer 15. (b)

To execute the hedging strategy, the sugar mill has to take opposite position in the futures market. The sugar mill is long on the asset in April. Therefore, it needs to sell the futures contract today. The number of contracts that needs to be sold is dependent upon the exposure in the physical asset and the value that one needs to cover. Assuming that 100% cover of the position in the asset is desired, we can find the number of contracts to be sold.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

$$\begin{aligned} \text{Quantity to be hedged Number of contracts to be sold} &= \frac{\text{Quantity to be hedged}}{\text{Quantity in each futures contract}} \\ &= \frac{100 \text{ MT}}{10 \text{ MT}} = 10 \end{aligned}$$

The sugar mill would go short on futures in February. Prior to April before the future contract expires, the sugar mill buys the future contract to nullify its position in the futures market. The underlying asset, sugar, is sold in the spot market. The price realized by the sugar mill in two different scenarios of decline or rise in sugar prices, using the principle of convergence of price on the due date of the contract, is worked out as shown below :

| When the price falls to ₹ 22 per kg. <i>In the futures market</i> | Cash flow (₹ per kg.) |
|--|--------------------------|
| Sold futures contract in February | + 25.00 |
| Bought futures contract in April | -22.00 |
| Gain in the futures market | + 3.00 |
| Price realized in the spot market | +22.00 |
| Effective price realized | ₹ 25.00 |

Here the loss of ₹ 3 (₹ 25 – ₹ 22) in the spot market is made up by the equal gain in the futures market.

When the price rises to Rs 26 per kg.

| <i>In the futures market</i> | |
|-----------------------------------|---------|
| Sold futures contract in February | + 25.00 |
| Bought futures contract in April | -26.00 |
| Loss in the futures market | -1.00 |
| Price realized in the spot market | +26.00 |
| Effective price realized | ₹ 25.00 |

Here the gain of Re 1 (₹ 26 – ₹ 25) in the spot market is offset by the equal loss in the futures market.

Due to the fact that prices of sugar in the spot market and futures market must converge, a fixed price of ₹ 25 per kg is realized by the sugar mill. The loss or gain in the spot market is fully compensated by gain/ loss in the futures market.

Q. 16. (a) What are factors that affect a value of a call option?

(b) The financial data of G.D. Pharma is as follows :

| | |
|---------------------------------|-------------|
| Paid-up capital (4 lakh shares) | ₹ 40 lakhs |
| Reserve and surplus | ₹ 180 lakhs |
| Profit after tax | ₹ 32 lakhs |

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

You are required to calculate :

- (i) The value of the rights and the market capitalization of G.D. Pharma after the rights issue, and
- (ii) The Net Asset Value (NAV) of the shares after the rights issue.

Answer 16. (a)

The factors that affect the value of a Call option are :

- (i) An increase in stock price causes an increase in the value of a call option.
- (ii) An increase in exercise price causes a decrease in the value of a call option.
- (iii) An increase in the time to expiration causes an increase in the value of a call option.
- (iv) An increase in the risk-free rate causes an increase in the value of a call option.
- (v) An increase in variance of stock return causes an increase in the value of a call option.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 16. (b)

| | |
|---|---|
| Term loan to be raised | = ₹ 100 lakhs |
| Amount to be raised through Rights issue | = ₹ 100 lakhs |
| Total amount required for expansion project | = ₹ 200 lakhs |
| Rights price (including premium) | = ₹ 25 |
| Number of rights shares to be offered | = ₹ 1,00,00,000 / 4,00,000 shares = ₹ 8 |
| Therefore, one rights share to be offered for every one existing share. | |
| Existing EPS | = ₹ 32,00,000 / 4,00,000 shares = ₹ 8 |
| Price-earning ratio | = 7 |
| Market price per share | = ₹ 8 × 7 = ₹ 56 |

$$\text{Value of right (R)} = \frac{P_0 - S}{N+1}$$

Where,

- P_0 = Cum-rights market share price
- S = Subscription price of rights share
- N = Number of existing shares required for a rights issue

$$R = (56-25)/(1+1) = ₹ 15.50$$

Market value after rights issue

$$= \frac{NP_0 + S}{N+1} = \frac{(1 \times 56) + 25}{1+1} = \frac{81}{2} = ₹ 40.50$$

Number of shares outstanding after rights issue = 8,00,000 shares

Market capitalization = Ex-rights price × No. of shares outstanding
= ₹ 40.50 × 8,00,000 = ₹ 3,24,00,000

Calculation of Net asset value per share after rights issue

| | ₹ | ₹ |
|-------------------------|-------------|-------------|
| Paid up capital | | 80,00,000 |
| Reserves and Surplus : | | |
| Existing | 1,80,00,000 | |
| Premium rights issue | 60,00,000 | 2,40,00,000 |
| Networth of the company | | 3,20,00,000 |

Net asset value per share = ₹ 3,20,00,000 / 8,00,000 = ₹ 40 per share

Q. 17. (a) Abhishek Ltd. has a surplus cash of ₹ 90 lakhs and wants to distribute 30% of it to the shareholders. The Company decides to buyback shares. The Finance Manager of the Company estimates that its share price after repurchase is likely to be 10% above the buyback price, if the buyback route is taken. The number of shares outstanding at present is 10 lakhs and the current EPS is ₹ 3.

You are required to determine :

- (i) The price at which the shares can be repurchased, if the market capitalization of the company should be ₹ 200 lakhs after buyback.
- (ii) The number of shares that can be repurchased.
- (iii) The impact of share repurchase on the EPS, assuming the net income is same.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(b) An analyst of BCK Securities Ltd. has made risk and return projections for the securities of Reliance, Hindalco, which are as follows :

| Scenario | Probability | Return on Reliance (%) | Return on Hindalco (%) | Market Return (%) |
|----------------|-------------|------------------------|------------------------|-------------------|
| 4% GDP growth | 0.30 | 3 | 2 | 1 |
| 6% GDP growth | 0.35 | 17 | 14 | 15 |
| 8% GDP growth | 0.25 | 20 | 19 | 17 |
| 10% GDP growth | 0.10 | 22 | 17 | 25 |

It is felt the interest rate of 7 per cent on the 91-day T-Bills is a good approximation of the risk-free rate.

Requirement :

- (i) Calculate the betas of Reliance and Hindalco and comment on your findings.
- (ii) Find out whether the shares of Reliance and Hindalco are under priced or over priced.

Answer 17. (a)

Calculation of Buyback Price if Market Capitalization should be ₹ 200 lakhs

Surplus cash available = ₹ 90 lakhs
 Estimated share price after repurchase = 10% above the buyback price
 Let market price of share after buyback be 'P'
 Market capitalization

$$= 1.10 P \left(10,00,000 - \frac{30\% \text{ of } ₹ 90,00,000}{P} \right)$$

$$= 11,00,000 P - 29,70,000$$

Market capitalization rate after buyback is ₹ 2,00,00,000

Then,

$$11,00,000 P - 29,70,000 = 2,00,00,000$$

$$11,00,000 P = 2,00,00,000 + 29,70,000$$

$$P = 2,29,70,000 / 11,00,000 = 20.88$$

∴ Buyback price is to be fixed at ₹ 20.88

(b) Number of shares to be bought back

$$= ₹ 27,00,000 / ₹ 20.88 = 1,29,310 \text{ shares}$$

(c) Impact on EPS due to buyback

No. of equity shares outstanding after bought-back

$$= 10,00,000 - 1,29,310 = 8,70,690 \text{ shares}$$

$$\text{EPS} = \frac{10,00,000 \times ₹ 3}{8,70,690} = ₹ 3.45$$

The EPS has increased from ₹ 3 to ₹ 3.45 after the shares are bought-back.

Answer 17. (b)

(i) Expected return of Reliance

$$E(R_R) = 0.30 \times 3 + 0.35 \times 17 + 0.25 \times 20 + 0.10 \times 22$$

$$= 11.95\%$$

Expected return of Market

$$E(R_M) = 0.30 \times 1 + 0.35 \times 15 + 0.25 \times 17 + 0.10 \times 25$$

$$= 12.30\%$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

$$\begin{aligned}\alpha_m^2 &= 0.30 \times (1 - 12.3)^2 + 0.35(15 - 12.3)^2 + 0.25(17 - 12.3)^2 + 0.10(25 - 12.3)^2 \\ &= 38.307 + 2.55 + 5.522 + 16.129 \\ &= 62.508 (\%) \\ \alpha_m &= \sqrt{62.508} \\ &= 7.906\%\end{aligned}$$

Cov (Reliance, MKT)

$$\begin{aligned}&= 0.30(-14.05)(1 - 12.3) + 0.35(17 - 14.05)(15 - 12.3) + 0.25(20 - 14.05)(17 - 12.3) \\ &\quad + 0.10(22 - 14.05)(25 - 12.3) \\ &= 37.459 + 2.788 + 6.991 + 10.096 \\ &= 57.334\%\end{aligned}$$

$$\begin{aligned}\beta (\text{Rel}) &= \text{Cov (Rel, MKT)} / \alpha_m^2 \\ &= 57.334 / 62.508 \\ &= 0.917\end{aligned}$$

Cov (Hind, MKT)

$$\begin{aligned}&= 0.30(2 - 11.95)(1 - 12.3) + 0.35(14 - 11.95)(15 - 12.3) + 0.25(19 - 11.95)(17 - 12.3) \\ &\quad + 0.10(17 - 11.95)(25 - 12.3) \\ &= 33.731 + 1.937 + 8.284 + 6.413 \\ &= 50.365\%\end{aligned}$$

$$\begin{aligned}\beta (\text{Hind}) &= \text{Cov (Hind, MKT)} / \alpha_m^2 \\ &= 50.365 / 62.508 \\ &= 0.806\end{aligned}$$

Hence, both the stocks are defensive with a (β) less than unity (i.e. < 1).

(ii) The equation of Security Market Line (SML) is :

$$R_j = R_f + (R_m - R_f) \beta$$

Required rate of return of Reliance is

$$R_{j(H)} = 7 + 0.917(12.3 - 7) = 11.86\%$$

As required rate of return (11.86%) is $<$ expected rate of return (14.05%), the share price of Reliance is undervalued.

Required Rate of Return of Hindalco is :

$$R_{j(H)} = 7 + 0.806(12.3 - 7) = 11.27\%$$

As required rate of return is less than the expected rate of return (11.27% $<$ 11.95%), the share price of Hindalco is undervalued.

Q. 18. (a) What are the differences between merchant banks and commercial banks?

(b) The settlement price of June Nifty Futures contract on a particular day was 4585. The minimum trading on Nifty Futures is 100. The initial margin is 8% and the maintenance margin is 6%. The index closed the following levels on the next five days :

| Day | 1 | 2 | 3 | 4 | 5 |
|----------------------|-------|-------|-------|-------|-------|
| Settlement price (₹) | 4,690 | 4,760 | 4,550 | 4,480 | 4,570 |

Required :

(i) Calculate the mark to market cash flows and daily closing balances in the account of :

(A) an investor who has gone long at 4585

(B) an investor who has gone short at 4585

(ii) Calculate the net profit/(loss) on each of the contracts.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 18. (a)

The differences between merchant banks and commercial banks are summarized below :

| Merchant Banks | Commercial Banks |
|--|--|
| The area of activities of merchant bankers is "equity and equity related". They deal with mainly funds raised through money market and capital market. | Basically deal and debt related finance and their activities are appropriately arrayed around credit proposal, credit appraisal and loan sanctions. |
| The merchant bankers are management oriented. They are willing to accept risk of business. | Commercial banks are asset oriented and their lending decisions are based on detailed credit analysis of loan proposals and the value of security offered against loans. They generally avoid risks. |
| The activities of merchant bankers include project counselling, corporate counselling in areas of capital restructuring, amalgamations, mergers, takeover etc, discounting and rediscounting of short term paper in money markets, managing, underwriting and supporting public issues in new issue market and acting as brokers and advisers on portfolio management in stocks exchange. Merchant banking activities have impact on growth, stability and liquidity of money markets. | Commercial bankers are merely financiers. |

Answer 18. (b)

$$\text{Initial margin} = 4,585 \times 100 \times 8/100 = ₹ 36,680$$

$$\text{Maintenance margin} = 4,585 \times 100 \times 6/100 = ₹ 27,510$$

The initial margin and maintenance margin are same for both long and short positions.

Margin Account of Investor who has gone long

| Day | Settlement price | Opening balance | Mark to market C/F | Margin call | Closing balance |
|-----|------------------|-----------------|--------------------|-------------|-----------------|
| 1 | 4,690 | 36,680 | (+) 10,500* | – | 47,180 |
| 2 | 4,760 | 47,180 | (+) 7,000 | – | 54,180 |
| 3 | 4,550 | 54,180 | (-) 21,000 | – | 3,180 |
| 4 | 4,480 | 33,180 | (-) 7,000 | 10,500 | 36,680 |
| 5 | 4,570 | 36,680 | (+) 9,000 | – | 45,680 |

$$* (4,690 - 4,585) \times 100 = (+) 10,500$$

Profitability of Investor who has gone long

At the end of the 4th day Margin account will show $(33,180 - 7,000) = 26,180$ (less than maintenance margin). Hence Margin call,

Net loss on the contract

$$= 47,180 - 45,680 = (-) 1,500$$

or

$$= 10,500 + 7,000 - 21,000 - 7,000 + 9,000 = (-) 1,500$$

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Margin Account of Investor who has gone short

(₹)

| Day | Settlement price | Opening balance | Mark to market (C/F) | Margin call | Closing balance |
|-----|------------------|-----------------|----------------------|-------------|-----------------|
| 1 | 4,690 | 36,680 | (-) 10,500* | 10,500 | 36,680 |
| 2 | 4,760 | 36,680 | (-) 7,000 | – | 29,680 |
| 3 | 4,550 | 29,680 | (+) 21,000 | – | 50,680 |
| 4 | 4,480 | 50,680 | (+) 7,000 | – | 57,680 |
| 5 | 4,570 | 57,680 | (-) 9,000 | – | 48,680 |

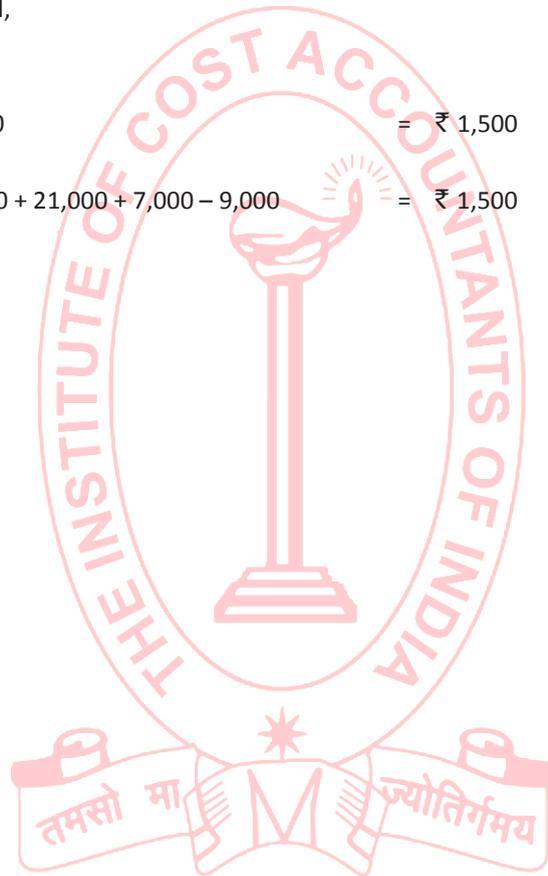
$$* (4,585 - 4,690) \times 100 = (-) 10,500$$

Profitability of Investor who has gone short

At the end of the 1st day Margin Account will show $(36,680 - 10,500) = 26,180$ (less than maintenance margin). Hence Margin call,

Net loss on the contract

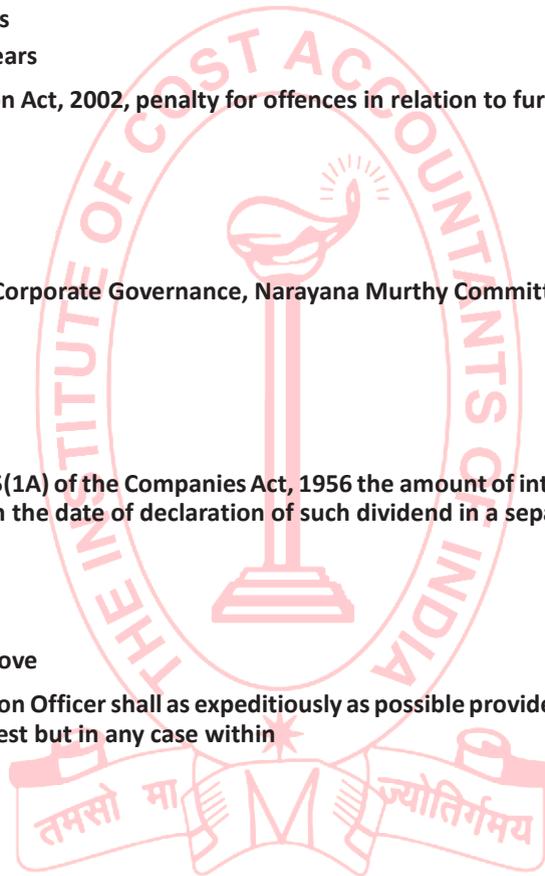
$$\begin{aligned} &= 48,680 - 36,680 &&= ₹ 1,500 \\ &\text{or} \\ &= -10,500 - 7,000 + 21,000 + 7,000 - 9,000 &&= ₹ 1,500 \end{aligned}$$



Section II : Corporate Laws and Corporate Governance

Q. 19. Choose the most appropriate one from the stated options and write it down (only indicate A, B, C, D as you think correct) :

- (i) Shareholders are empowered to transfer their shares by
- A. Section 82
 - B. Section 108
 - C. Section 77
 - D. Section 113
- (ii) A report by the accountants on the profits or losses of the business should be included in the Prospectus for the preceding
- A. 5 financial years
 - B. 5 accounting years
 - C. 3 financial years
 - D. 3 accounting years
- (iii) Under Competition Act, 2002, penalty for offences in relation to furnishing of information is
- A. Rs 5 lakh
 - B. Rs 10 lakh
 - C. Rs 25 lakh
 - D. Rs 50 lakh
- (iv) In the context of Corporate Governance, Narayana Murthy Committee was formed in the year
- A. 2002
 - B. 2003
 - C. 2004
 - D. 1999
- (v) As per Section 205(1A) of the Companies Act, 1956 the amount of interim dividend shall have to be deposited from the date of declaration of such dividend in a separate bank account within
- A. Three Days
 - B. Five Days
 - C. Seven Days
 - D. None of the above
- (vi) A public Information Officer shall as expeditiously as possible provide information from the date of receipt of request but in any case within
- A. 15 days
 - B. 30 days
 - C. 45 days
 - D. 60 days
- (vii) Buy back of equity shares in a financial year shall not exceed
- A. 25% of authorized capital
 - B. 25% of paid up capital
 - C. 25% of called-up capital
 - D. 25% of subscribed capital



- (viii) Which of the following items requires special resolution in a general meeting under the Companies Act, 1956?
- A. Issue of shares at discount
 - B. Adoption of Statutory Report
 - C. Appointment of Managing/ Whole-time Director
 - D. Reduction of Share Capital
- (ix) A listed company is required to furnish to the Stock Exchange(s) unaudited financial results on a
- A. Annual basis
 - B. Half-yearly basis
 - C. Quarterly basis
 - D. Monthly basis
- (x) The Board may appoint additional directors only if it is authorized by
- A. Memorandum of Association
 - B. Articles of Association
 - C. Company Law Board
 - D. Shareholders in the AGM

Answer 19.

- (i) - A
- (ii) - A
- (iii) - B
- (iv) - B
- (v) - B
- (vi) - A
- (vii) - B
- (viii) - D
- (ix) - C
- (x) - B

Q. 20. (a) Who is a Promoter?

(b) A company is not authorized by its memorandum of association to run a canteen but it is obliged to do so under Section 46 of the Factories Act, 1948. Under the facts and circumstances, should the company undergo the formalities of changing its objective clause?

(c) Can there be more than one or two main objects in the case of a new company to be formed, and if so, whether the Registrar could ask the subscribers to show him some material evidence to satisfy his as to whether the company on incorporation would be carrying on the objects stated as the main objects?

Answer 20. (a)

This term has not been defined under the Companies Act. The word Promoter is used in common parlance to denote any individual, syndicate, association, partnership or a company which takes all the necessary steps to create and mould a company and set it going. The promoter originates the scheme for the formation of the company; gets together the subscribers to the memorandum; gets memorandum and articles prepared, executed and registered; finds the bankers, brokers and legal advisors' locates the first directors, settle the terms of preliminary contracts with vendors and agreement with underwriters and makes arrangements for preparation, advertisement and circulation of the prospectus and placement of the capital.

However, the persons assisting the promoters by acting in a professional capacity do not thereby become promoters themselves. Thus, a solicitor who drafts the articles or the accountant who values assets of a business to be purchased are merely giving professional assistance to the promoter.

A person cannot, however, become a promoter merely because he signs the memorandum as a subscriber for one or more shares.

Answer 20. (b)

If the running of the canteen is incidental to the main object of the company, there is no necessity to amend the objects clause, but if the purpose is to earn profit, then the objects clause should contain enabling provision to carry on such business by suitably amending the memorandum in accordance with the law.

Answer 20. (c)

The meaning of the words "to be pursued by the company on incorporation" is pertinent. These words mean that the objects stated as the main objects are to be pursued by the company immediately after incorporation or within a reasonable time thereafter. The Registrar of Companies will be entitled to satisfy himself while registering a company that the objects intended to be the main objects clause were really the objects intended to be pursued by the company either immediately or within a reasonable time after its incorporation. For this purpose he might ask for certain documents, information or explanations, for example, correspondence or industrial licenses, or permissions or agreements with collaborators, vendors etc. This is important also because the Registrar appears to have no power after the incorporation of a company to question as to why the company has not pursued any particular objects stated to be one of the main objects.

Q. 21. (a) Document on which a company borrowed a sum of money was executed by the managing director, who was the chief functionary of the company and to comply with the requirements of the Articles the signatories of two other directors were forged. Can the company be allowed to deny liability under this document?

(b) Under Section 57 of the Companies Act, 1956, a prospectus cannot include a statement by an expert if he has been engaged or interested in the formation or promotion, or in the management of the company. Would a chartered accountant or a solicitor be deemed to be engaged in the formation or promotion of a company, if he had been engaged in preparation of memorandum and articles or financial or financial or collaboration schemes or such other things in relation to the formation of a company?

(c) The shares of Bright Ltd. are underwritten by the recognized underwriters. The underwriters having the risk, asked the management of Bright Ltd. to safeguard them. Bright Ltd. arranged with the sister concerns to provide guarantee to the underwriters. The information in respect of this arrangement is not disclosed in the prospectus issued by Bright Ltd. while inviting subscription from the public. Does this arrangement amount to mis-statement in the prospectus?

Answer 21. (a)

In *Rubber v. Great Fingall Consolidated*, Lord Loreburn held that protection under doctrine of indoor management could not be extended to cases of forgery. A transaction effected by forgery is rendered void ab initio for absence of consent and not voidable on ground of mere fraud. The rule of indoor management only covers the gap created by lack of authority. It cannot apply to transactions which are void or illegal *ab initio*.

However, in *Sri Kishan v. Mondal Bros. & Co.*, it was held that a company may be held liable for fraudulent acts of its officers acting under their ostensible authority on its behalf. Thus, where a managing director practices a fraud on the company and does not place the money borrowed by him on behalf of the company with the company, the company cannot defeat a bona fide creditor's claim for recovery of the money on the ground of fraud of its own officers.

In the given problem, therefore, the company will not be allowed to deny liability on the document in question.

Answer 21. (b)

A chartered accountant or a solicitor engaged in the preparation of memorandum and articles of association of a company or any financial or collaboration scheme purely in their professional capacity without having any other stake would not be considered either engaged or interested in the formation or promotion of a company as the purpose of this provision was that any expert opinion given in the prospectus should not be influenced by one's personal interest. Any statement by him in the capacity of an expert in the prospectus therefore, would neither vitiate the prospectus nor would amount to contravention of Section 57.

Answer 21. (c)

There was no mis-statement in the prospectus issued by Bright Ltd. as this would amount to a sub-underwriting arrangement with some other company. There was no statutory obligation to give particulars about sub-underwriting in the prospectus.

It was, however, felt that the company might be contravening Section 372 of the Companies Act in case shares were not fully subscribed and the sub-underwriters were asked to take the shares. It was also felt that if there was any consideration flowing from Bright Ltd., in respect of sub-underwriting, the arrangement would be hit by Section 77(2) of the Act.

Q. 22. (a) A company increased the authorized share capital by a special resolution. However, the notice in Form No. 5 was not filed with the Registrar of Companies nor the requisite fee paid on the increase. After two years, the earlier resolution raising the share capital was rescinded and share capital brought back to its original level. Whether the company committed any offence and, if so, was it a continuing offence?

(b) X, Y and Z hold jointly 100 shares in a company. They want the order of names changed in the share certificates as Y, X and Z and make an application for change and lodge the original share certificate. The company directed them to execute a proper instrument of transfer to effect the change. Is the company justified?

(c) The board of directors of M/s All India Leather Producers Association Ltd. have passed a resolution to the effect that no member who is indulging in activities detrimental to the interests of the company be permitted to examine the records or obtain certified copies thereof. A member of the company who is also a member of the Rival Association demands inspection of the register of members and minutes of general meetings and certified true copies thereof. The company refuses the inspection, etc., on the strength of the resolution referred to above. Examine the correctness of refusal by the company in the light of the provisions of the Companies Act and the remedial action, if any, that can be taken by the aggrieved member in this case.

Answer 22. (a)

According to Section 97 of the Companies Act, 1956 where a resolution has been passed increasing the share capital beyond the authorized capital, notice of increase in Form No. 5 must be given to the Registrar within 30 days after the passing of the resolution authorizing the increase. If any default is made in complying with this section, the company and every officer of the company who is in default shall be punishable with fine which extend to five hundred rupees for every day during the default continues.

The given facts are similar to the case of *Amison Foods Ltd. v. ROC* [1999] 1 Comp. LJ 115: [1999] 33 CLA 46 (Ker.) in which it was held that the failure to file with the Registrar of Companies Form No. 5 for giving notice of increase of capital within 30 days of passing of the resolution to increase capital is a continuing offence. A subsequent resolution to rescind the earlier resolution would not absolve any body of the duty to file notice and deposit requisite fee on the basis of the resolution as first passed. But, if the company has rescinded the resolution soon after it was passed without giving effect to or acting thereon, no fee need be paid.

Answer 22. (b)

As per the Companies Act, it is possible for two or more than two persons to hold shares jointly in a company. In that case all of them are not the individual members of the company. Instead, they are said to hold the shares jointly.

In case of joint shareholdings one or more of them may require the company to alter or rearrange the serial order of their names in the register of members of the company. In this process, there will be need for effecting consequential changes in the share certificates issued to them. Since no transfer of any interest in the shares takes place on such transposition, the question of insisting on filling transfer deed with the company may not arise.

A request signed by all the holders (in the existing order and also proposed order) is sufficient which the Board of directors can consider and effect transposition of names.

So, in the given case, the stand of the company is not justified.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Answer 22. (c)

According to the provisions contained in section 163 of the Companies Act, 1956, every member of the Company is entitled to inspect the register of members without payment of any fee. Even a non-member of the company can inspect the register of members on payment of prescribed fee. They can also ask for copies of extracts from the register of members on payment of the prescribed fee as copying charges. Similarly, as per section 196, the minutes books of the general meetings are also to be made available for inspection of the members of the Company without any charge. Thus, M/s All India Leather Producers Association Ltd. have no right to refuse the inspection of the register of members and minutes books of general meetings. The resolution passed by the said Association is not valid as it cannot go beyond the provisions of the Act. The aggrieved member has every right to approach the Company Law Board under Section 163(6) and 196(5) of the Companies Act. For this purpose the member has to file an application before CLB along with the prescribed application fee.

Q. 23. (a) Hameed, the chairman of a company, borrowed ₹ 10 lakhs from the State Bank of India, Patna, under a promissory note. A suit was filed for the recovery of debts on the basis of the promissory note executed by the chairman. The company refused to accept the liability on the plea that the chairman had borrowed funds without authorization from the company. Will the company succeed? Explain.

(b) The chairman at a Board meeting counts 5 votes in favour of 6 votes against the resolution. Can the chairman cast his own vote, which he had not exercised earlier, in favour of the resolution and also the casting vote which the articles of association authorise, and declare the resolution as passed?

(c) The company of which you are the secretary has adopted 1st April to 31st March as its financial year. The last annual general meeting of the company was held on 30.09.2011 to approve the accounts for the year 2010-11. The audit of the accounts for the year 2011-12 has not been completed. Your directors intend to hold the annual general meeting on 30.09.2012 to transact the business other than the consideration of the accounts for the year 2011-12 and to adjourn the meeting to a later date for the purpose of adoption of the annual accounts for 2011-12.

State whether intended procedure would be in order? Comment on holding of the adjourned meeting on 31.01.2013, if the audit is completed in December 2012.

Answer 23. (a)

The facts given in the question are based on the case of Kumar Krishna Rohatgi v. State Bank of India [1980] 50 Comp. Cas. 722. In this case, the company borrowed an amount of ₹ 5 lakhs from the State Bank of India under a promissory note guaranteeing the repayment by executing a guarantee in favour of the company. The promissory note was renewed from time to time. In suit for the recovery, the company contended that the promissory note was executed by the chairman without Board resolution authorizing him to execute the promissory note as required under section 292(1)(c) of the Companies Act, 1956. The Patna High Court held that in cases where the directors borrowed funds without proper authorization from the company and the amount borrowed was utilized for the benefit of the company, the company cannot then repudiate its liability to repay, since general law implied a promise to be paid by the principal when the money so borrowed by an agent had gone into the coffers of the principal. Hence, the principal had taken the benefits of the amount borrowed. Hence, the company's contention was rejected by the Patna High Court. Accordingly, the decision shall apply to the case in question *mutadis mutandis*.

Answer 23. (b)

As per Guidance Note on Meetings of the board of Directors issued by ICSI, a chairman does not have an inherent right to the casting vote nor it is a right given by the statute. It has to be conferred on the chairman by the articles. In the given case, the articles of the company authorize the chairman to cast his casting vote.

However, the guidance note provides that where the chairman chooses to exercise his vote as a director, he should do so before the voting is conducted. It also provides that a casting vote is a second or deciding vote. If the votes are divided unequally, the question of using a casting vote does not arise. It is only in the event of equality of votes, for and against, that the question of a casting vote assumes relevance.

Therefore, in the given case, the chairman cannot cast his own vote which he had not exercised earlier as the voting has concluded. Again, he cannot cast his casting vote as the votes are not divided equally.

Answer 23. (c)

According to section 210(3)(b), at every AGM of the company (except the first AGM) held in pursuance of section 166, the Board of Directors must place before the company a balance sheet and a profit and loss account for the period beginning with the day immediately after the period for which accounts were last submitted and ending with the day which shall precede the day of the meeting by not more than six months. Where extension of time has been granted by R.O.C. for holding meeting beyond six months, the financial accounts must be placed within the extension so granted.

Where accounts are not ready and available for being placed at an annual general meeting to be held within the time limit allowed by the Act for holding the meeting the usual practice is to hold the meeting within the statutory time limit, transact all the business other than the consideration of accounts and then adjourn the meeting by an appropriate resolution to a future date when the accounts will be ready but then adjourned AGM must be held within the statutory period (including the extension thereof, if any, allowed), as provided in section 166(1) and such adjournment cannot bypass the provisions of section 210 of the Act.

In view of the legal position stated above the intention of the directors to hold AGM for the year ending 31st March, 2012 on 30.09.2012 to transact the business other than consideration of accounts for the year 2011-12 and to adjourn the meeting at a later date for the purpose of adoption of the accounts is not violative of the provisions of section 166 read with section 210. Further, the adjourned meeting which is deemed to be a continuation of the earlier meeting must be finished within the statutory period of 9 months (including extension) prescribed under section 210. In other words, the adjourned meeting must also be completed by 31.12.2012.

In case the adjourned meeting is held on 31.1.2013, it shall be violative of section 210(3) of the Companies Act, 1956 and the delinquent directors would be liable for prosecution under section 210(5) and section 166.

Q. 24. (a) The paid up share capital of AJD Ltd. is ₹ 10 crores consisting of 70 lakhs Equity Shares of ₹ 10 each, fully paid-up and 30 lakhs Preference Shares of ₹ 10 each, fully paid-up. Nationalized Banks, L.I.C. and I.D.B.I. hold among themselves 30 lakhs Equity Shares and 25 lakhs Preference Shares.

With reference to the provisions of the Companies Act, 1956, examine whether AJD Ltd. is a Government company. Explain the manner in which you would proceed in the matter of appointment of auditors for the said company.

(b) Directors of Sachin Ltd. are not holding any shares in Dhoni Ltd. Similarly directors of Dhoni Ltd. are not holding any shares in Sachin Ltd. But, wife of director 'S' of Sachin Ltd. holds 40% of the paid up share capital of Dhoni Ltd. Board of directors of Sachin Ltd entered into a contract with Dhoni Ltd. for purchase of goods and director 'S' did not disclose his indirect interest in Dhoni Ltd. Examine whether 'S' has violated any of the provisions of the Companies Act and also the validity of the contract.

(c) As scheme of amalgamation of company 'X' with company 'Y' was presented to the High Court for sanction after the scheme was approved by an overwhelming majority of shareholders and secured and unsecured creditors of both companies at meetings held under section 391.

While the scheme was pending in the High Court, some of the members requisitioned an extra- ordinary general meeting for the purpose of requesting Company 'X' to negotiate with Company 'Y' as according to the requisitionists the exchange ratio was not fair and reasonable. Can the directors refuse to call the extraordinary general meeting?

Answer 24. (a)

Section 617 defines a Government company to mean in which not less than 51% of the paid-up share capital is held by the Central Government, or any State Government (s) or partly by the Central Government and partly by one or more State Governments. Shareholdings of financial institutions and nationalized banks are not to be taken into account.

Therefore, AJD Ltd., is not a Government company.

However, as per section 619B for the purpose of appointment of auditors, shareholdings of nationalized banks and other named Institutions shall be taken into account. Thus, the auditor of AJD Ltd. shall be appointed in the same manner by the Comptroller and Auditor General of India (C&AG).

Answer 24. (b)

Section 297 does not apply to a contract between two public companies and therefore the present case is outside the purview of section 297. However, as per section 299, every director who is anyway, directly or indirectly, interested in a contract or arrangement shall disclose the nature of his interest. Following must be noted in this regard.

- Relationship of husband and wife, or father and son is capable of influencing the judgement of a person so that it is *prima facie* a matter of interest which must be disclosed. The interest need not be direct [Pydah Venkatachalapathi v. Guntur Cotton, Jute and Paper Mills Co. Ltd. AIR 1929 Mad 353.]
- If to the knowledge of a director, his relative is concerned or interested in a contract or arrangement, the director must disclose the same to the Board [Fateh Chand Kad v. Hind Sons (Patiala) Ltd. (1957) 27 Comp Cas 340].

Therefore, in view of the above judicial rulings, 'S' should disclose his interest since he is indirectly interested in the contract, as his wife is holding 40% of the paid up share capital of Dhoni Ltd. Failure to disclose the interest by 'S' amounts to non-compliance of section 299 and the following consequences shall follow :

- 'S' shall vacate the office of director held by him (Section 283)
- He shall be punishable with fine which may extend to ₹ 50,000 (Section 299)
- If 'S' acts as a director when he knows that the office of director held by him has become vacant on account of non-disclosure of interest, he shall be punishable with fine which may extend to ₹ 5,000 for each day on which he acts as a director (Section 283)
- The contract is not illegal, void or unenforceable. However, the company has an option to avoid the contract [Amritsar Rayon and Silk Mills Ltd. v. Arirchand Saideh (1988) 64 Comp Cas 762].

Answer 24. (c)

The facts in the problem are similar to the facts of Pavin Kantilal v. Rohini Ramesh save [1985] 57 Comp. Cas. wherein it was held that the Court cannot prevent a company from holding a requisitioned meeting for considering a proposed modification of a scheme which is already lying before the court for its sanction. The court has been given wide powers under section 392 to give directions or modify the compromise or arrangement for its proper working and that a mere discussion by shareholders of modifications at a properly requisitioned meeting would not affect either the scheme or the Court's powers.

Directors, therefore, cannot refuse to call the extraordinary general meeting requisitioned by the members in this case.

Q. 25. (a) The directors of a company held more than 75% shares in the company. The company was carrying on business of construction of roads. The directors acquired certain contracts in their own name in breach of trust and made profits for themselves. In the annual general meeting, they passed a resolution that the company had no interest in the contract. The minority shareholders filed a case against directors asking them to account for the profits. Discuss.

(b) Inefficient Construction Ltd. has gone into liquidation because of the inability of the company to pay its debts. During the course of winding up a proposal was put forward by the previous management to revive the working of the company through a scheme of arrangement between the company and its creditors. As per the scheme, all the creditors have to forego fifty per cent of their dues. Some of the creditors and shareholders have voiced their opposition to the said scheme. The company approaches you for advice. Discuss the steps that have to be taken by the company in this regard.

(c) An understanding has been reached among the manufacturers of cotton to control the price of cotton, but the understanding is not in writing and it is also not intended to be enforced by legal proceedings.

Examine whether the above understanding can be considered as an 'agreement' within the meaning of section 2(b) of the Competition Act, 2002.

Answer 25. (a)

The majority rule governs the internal management of the company. As such if any wrong is done to the company, the proper plaintiff to institute a suit is the company itself and the court would not interfere at the instance of the individual shareholders [Foss v. Harbottle (1843) 2 Hare 461]. However, if the majority misuses its powers to defraud or oppress the minority, an action can be brought by an individual member.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

Three directors holding 75% of the share capital of the company used their positions as directors and obtained a contract in their own names. As it amounted to breach of duty towards the company, they called a general meeting in which a resolution was passed to the effect that the company had no interest in the contract. It was held that directors utilized the contract belonging to the company for their personal gain and it amounted to a fraud on the minority. The company could claim profits realized by the directors [Cook Deeks (1916) 1 AC 554].

The facts of the given case are identical to the facts specified in the above case and so it can be said that the minority shareholders will succeed.

Answer 25. (b)

As per the provisions contained in section 517 of the Companies Act, 1956. M/s. Inefficient Construction Ltd. can enter into a scheme of arrangement with the creditors, even though the company is in liquidation. According to the said section, the scheme of arrangement will be binding on the company and its creditors provided : (i) it has been approved by a special resolution of the company; and (ii) agreed to by three fourths in number and value of the creditors. Any creditor or contributory may, however, within three weeks from the completion of the arrangement appeal to the Court and the Court may amend, vary, confirm or set aside the arrangement. The company should take the following steps in this regard :

- (i) To get the draft scheme of arrangement approved by the Board of Directors.
- (ii) To apply to the Court for directions to convene the meetings of the members/ creditors.
- (iii) To hold the general meeting and pass the required special resolution.
- (iv) To move the High Court for approval of the scheme.
- (v) On receipt of the court's order, to file the certified copy of the order with the Registrar of Companies.

Answer 25. (c)

As per section 2 (b), 'agreement' includes any arrangement or understanding or action in concert –

- (i) Whether or not, such arrangement, understanding or action is formal or in writing; or
- (ii) Whether or not such arrangement, understanding or action is intended to be enforceable by legal proceedings.

In the given case, the understanding reached among the manufacturers of cotton to control the price of cotton shall amount to an 'agreement' as defined under section 2 (b) notwithstanding the fact that –

- (i) Such an understanding is not in writing; and
- (ii) Such an understanding is not intended to be enforced by legal proceedings.

Q. 26. (a) Fast Ltd. has a paid up capital of ₹ 200 lakhs and Reserves and Surplus of ₹ 400 lakhs. It has already entered into the following transactions :

| | |
|----------------------|-----------|
| Loan to D Ltd. | 100 lakhs |
| Investment in E Ltd. | 40 lakhs |
| Investment in F Ltd. | 100 lakhs |
| Investment M Ltd. | 50 lakhs |
| Investment in G Ltd. | 50 lakhs |

Examine the following proposals in the light of the provisions of the Companies Act, 1956.

- (i) To invest in the shares of E Ltd. to the extent of ₹ 40 lakhs being the 1:1 rights offer made by that company.
- (ii) Giving of a loan of ₹ 16 lakhs to P Ltd.
- (iii) To give a guarantee for ₹ 10 lakhs to the Indian Bnak Ltd., in respect of a loan to be granted to H Ltd., a company in the same group.
- (iv) To invest in the shares of D Ltd., to the extent to ₹ 50 lakhs.

Note : The transactions are in chronological order and are to be considered cumulatively.

Revisionary Test Paper_Final_Syllabus 2008_June 2013

(b) Mr. Ramchandra is holding the post of Director in five companies out of which Sunshine Ltd. is one. For the financial year ended on 31st March 2013, Sunshine Ltd. failed to pay interest on loans taken from a financial institution and also failed to repay the matured deposits. On 1st July 2013, Mr. Ramchandra accepting the post of Additional director in Elite Ltd., submitted a declaration that the disqualification specified in Section 274 of the Companies Act, 1956 is not applicable in his case. Decide whether the declaration submitted by Mr. Ramchandra to Elite Ltd. is in order.

(c) Critically discuss the role of stakeholders in corporate governance.

Answer 26. (a)

Calculation of limits :

Note 1 : (a) 60% of paid up capital and free reserves

60% of (₹ 200 lakhs + ₹ 400 lakhs)

60 % of ₹ 600 lakhs = ₹ 360 lakhs

(b) 100% of free reserves = ₹ 400 lakhs.

Limit under section 372 (A) is the higher of (a) or (b) i.e. ₹ 400 lakhs. Note 2 :

Value of transactions already entered into is ₹ 340 lakhs

(i) The proposed investment in the shares of E Ltd., to the extent of RS. 40 lakhs is in response to a 1:1 rights offer from that company. The provisions of section 372 A do not apply to investments made in rights shares in pursuance of section 81 (1) (a). Therefore the company can proceed with the transaction. Remember, unanimous consent of Board is not required.

(ii) At this stage the value of the transaction is ₹ 380 lakhs. Investments in rights shares shall be included for computing value of investments for subsequent transactions. It is only the occasion of rights that is exempted and not the shares themselves. The proposed transaction i.e., loan of ₹ 16 lakhs to P Ltd., will take the value of the transactions to ₹ 396 lakhs, which is below the ceiling limit of ₹ 400 lakhs. Therefore, the company shall comply with the procedure discussed under section 372 A.

(iii) The value of the transactions at this stage is RS. 396 lakhs. The proposal to give a guarantee of ₹ 10 lakhs would take the value of the transactions to ₹ 406 lakhs and will normally require a previous sanction by way of special resolution. But, if exceptional circumstances exist that prevent the company from obtaining previous sanction by special resolution, then the board may give guarantee without previously authorized by a special resolution.

(iv) The value of transactions at this stage is ₹ 406 lakhs, which is above the limits prescribed. The proposed investment in shares of D Ltd., may be made after passing a special resolution in a general meeting and filling of Form 23 within 30 days of the date of passing the resolution.

Answer 26. (b)

As per section 274 (1)(g), a director of a public company shall be disqualified from being appointed as a director in any other public company, if the public company of which he is already a director –

- (i) Does not file the annual accounts and annual returns for any continuous 3 financial years commencing on and after 1.4.1999; or
- (ii) Fails to repay its deposit or interest thereon on due date or redeem its debentures on due date or pay dividend and such failure continues for 1 year or more .

In the present case, Sunshine Ltd. has committed the following defaults :

- (i) Failure to pay interest on loans taken from a financial institution for the financial year ended on 31st March, 2013.

However, such failure does not attract the disqualification under section 274(1)(g), since the disqualification is incurred only if the default relates to payment of 'public deposits', and not on non-payment of interest on 'loans' obtained from a financial institution.

- (ii) Failure to repay the matured deposits on due date for the financial year ended on 31st March, 2010. Default in payment of matured deposits or interest thereon would result in applicability of section 274(1)(g) only if such default continues for 1 year or more. In the absence of any information, it may be assumed that

Revisionary Test Paper_Final_Syllabus 2008_June 2013

such default has not continued for 1 year, as on 1st July, 2010.

Accordingly, none of the directors of Sunshine Ltd. are disqualified under section 274 (1)(g). Hence, Mr. Ramchandra can be appointed as an additional director of Elite Ltd. on 1st July 2010, and so the declaration given by Mr. Ramchandra is in order.

Answer 26. (c)

The corporate governance framework should recognize the rights of stakeholders as established by law and encourage active co-operation between corporations and stakeholders in creating wealth, jobs and the sustainability of financially sound enterprises.

- (i) The corporate governance framework should assure that the rights of stakeholders that are protected by law are respected.
- (ii) Where stakeholder interests are protected by law, stakeholders should have the opportunity to obtain effective redress for violation of their rights.
- (iii) The corporate governance framework should permit performance-enhancing mechanisms for stakeholder participation.
- (iv) Where stakeholders participate in the corporate governance process, they should have access to relevant information.

Q. 27. (a) What do you understand by the expression 'corporate governance'? (b)

Define 'competent authority' under Right to Information Act 2004.

(c) The paid-up share capital of ABC Ltd. is ₹ 5 lakhs consisting of 50,000 equity shares of ₹ 10 each fully paid-up. Certain members of the company holding the following shares requisitioned an extraordinary general meeting on 1.2.2013 :

- A - 2,250 shares
- B - 2,000 shares including 500 bonus shares
- C - 1,000 shares including 500 right shares

The directors have failed to call the meeting on the pretext that the articles have not permitted the same. What is the course of action open to the aforesaid members?

Answer 27. (a)

The Cadbury Committee Report (1991) defines corporate governance as 'a system by which the corporate are directed and controlled'.

Corporate governance means the idea of ensuring proper management of companies through the institutions and mechanisms available to the shareholder. According to Kumarmangalam Birla, the principal objective of good corporate governance is to enhance shareholder value.

A system of good corporate governance focuses on the relationship of accountability between the principal actors of sound financial reporting – the Board, the Management and the Auditor. It holds the management accountable to the board, and the board accountable to the shareholders, and in the process audit acts as a catalyst for effective financial reporting.

Good corporate governance should ensure :

- (i) Clear responsibilities and functional authorities.
- (ii) Precise distinction between direction and management, and
- (iii) Total transparency in respect of all actions of management.

Answer 27. (b)

"Competent authority" means-

- (i) The Speaker in the case of the House of the People or the Legislative Assembly and the Chairman in the case of the Council of States or the Legislative Council ;
- (ii) The Chief Justice of India in the case of the Supreme Court;
- (iii) The Chief Justice of the High Court in the case of a High Court;

Revisionary Test Paper_Final_Syllabus 2008_June 2013

- (iv) The President or the Governor, as the case may be, in case of other authorities created by or under the Constitution;
- (v) The administrator appointed under article 239 of the Constitution;

Answer 27. (c)

Section 169 of the Companies Act, 1956 provides that the Board of directors of a company must call an extraordinary general meeting if required to do so by members holding, on the date of deposit of the requisition, not less than one tenth of such of the paid up share capital as carries the right to vote in regard to the matter proposed for consideration.

Here the total share capital held by the requisitionists amounts to ₹ 52,500 and exceeds one tenth of the total of ₹ 5 lakhs as on the date of requisition on 1.2.2013. Bonus and rights shares are at par with ordinary shares and are to be included in arriving at the eligible value.

Therefore, the requisition is a valid one.

When the requisition is deposited at the registered office of the company, the director should within 21 days, move to call a meeting to be held within 45 days from the date of lodgement of the requisition. If the directors fail to do so, the requisitionists representing either a majority in value of the paid-up share capital held by all of them or not less than one tenth of the paid up share capital carrying voting power in regard to the matter proposed, whichever is less, may themselves proceed to call the meeting within 3 months from the date of the requisition, and claim the necessary expenses from the company. It should be noted that the Articles of Association cannot take away from members this right of requisitioning.

Q. 28. (a) In A Board meeting, a few directors raise disagreements on the minutes of the earlier Board meeting alleging that the decisions were recorded wrongly. Advise the chairman.

(b) A charge in favour of a public financial institution created by a public company to secure a sum of ₹ 150 crore was not created within the statutory period and the Company Law Board on an application made by the company did not grant the extension of time. Is it possible to revive the said charge?

(c) A group of shareholders of Mismanaged Ltd. filed an application before the Company Law Board (CLB) alleging various acts of fraud and mismanagement by Mr. Goldfish, the Executive Director & his associates. During the course of hearing before the CLB, the authorized representative of the said company contended that the alleged transactions had taken place several years ago and the company has already removed the Executive Director, who was responsible for such transactions and hence there is no case before the CLB to interfere in the working of the company. Against the submissions on behalf of the company, the applicants submitted that although the fraudulent transactions were done in past and the Executive Director has been removed, but the company is still controlled by the persons, who are in league with the erstwhile Executive Director and are working as his henchmen.

State the merits of the applicants' arguments and the powers of the CLB.

Answer 28. (a)

The provisions relating to minutes of Board meeting are contained in sections 193 to 195. As per section 193, minutes of Board meeting shall be signed by the chairman of the same meeting or chairman of the next succeeding meeting.

The chairman has an absolute discretion in regard to the inclusion or non-inclusion of any matter in the minutes. If minutes have been drafted by the secretary but have not been signed, any alteration may be made in the minutes by the chairman. Such alteration does not require passing of any board resolution or consent of any of the directors.

However, if minutes have already been signed but certain directors raise disagreements on the minutes, the proper course is to pass a fresh resolution modifying the earlier resolution recorded in the minutes. The old minutes shall not be deleted or crossed out [Re Cawley and Company, (1889) 42 Ch. D 209].

In the given case it is not clear whether the minutes have already been signed by the chairman or not (since minutes of a Board meeting can be signed even after the conclusion of succeeding Board meeting). If the minutes have not been signed, the chairman may, after considering the objections of the directors, make alterations in the minutes drafted by the secretary. However, if the minutes have already been signed, then the chairman should allow the

Revisionary Test Paper_Final_Syllabus 2008_June 2013

moving of a motion, for passing a fresh resolution modifying the earlier resolution. Such subsequent resolution would make the earlier resolution inoperative.

Answer 28. (b)

Section 125 provides that every charge created by a company to which the section applies shall so far as any security on the company's property or undertaking is conferrer thereby, be void against the liquidator and any creditor of the company, unless the prescribed particulars of the charge, together with the instrument, if any, by which the charge is created or evidenced or a verified copy thereof are filed with the Registrar of Companies within 30 days of its creation. However, on sufficient cause been shown, the Registrar may allow such filing within thirty days next following the expiry of the said 30 days, with additional fees. Section 637B of the Act provides that where any document which is required to be filed with the Registrar under any provision of this Act is not filed within the time specified therein, the Central Government may for reasons to be recorded in writing condone the delay. However, under section 141, the Company Law Board has been vested with discretionary powers to condone the delay in filing the particulars of charge, or modification or satisfaction thereof in the prescribed time. In view of the specific provisions contained in section 125 and power given to CLB for condonation of delay under section 141, the Central Government cannot exercise its power under section 637B. As the Company Law Board in the present case has not granted extension, the charge stands as void and cannot be revived. A new charge may, however, be created.

Answer 28. (c)

The powers of the CLB under section 397 and section 398 can be invoked for obtaining relief from oppression and mismanagement only where the affairs of the company are being conducted in a manner oppressive of any member or members or in a manner prejudicial to the interest of the company.

The words 'are being conducted' would indicate that oppression and mismanagement should be a continuous course of conduct and should be present on the date of the application to the CLB. Thus the CLB does not have power to interfere with past and concluded transactions entered into by a company. At best, the CLB can exercise its power to set aside any transfer of property effected within 3 months before the date of the application. Further the CLB can exercise the power conferred by Section 406 to direct the delinquent directors, managers and other officers to refund any funds of the company that they have retained or misapplied or pay compensation for loss arising on account of misfeasance or breach of trust. As the applicants have not established the above facts beyond a vague statement that the management of the company is still controlled by the henchmen of Mr Goldfish, the CLB will not exercise its powers under the Act. This view is supported by the decision in Seth Mohanlal Ganpatram v. Shri Satyaji Jubilee Cotton and Jute Mills Company Ltd. (1964) 34 Comp. Cas. 777.

Q. 29. (a) A public limited company forfeited 90 equity shares and re-issued the same which resulted in earning a surplus of ₹ 5,000. The company did not file return of allotment with the Registrar of Companies in respect of re-issued shares. Explain whether the company has contravened any provision of the Companies Act, 1956 by non-filing of the return.

(b) Examine the extent to which the legal representatives of a deceased director against whom misfeasance proceedings were initiated by the liquidator of the company, under the Companies Act, 1956, can be held liable.

(c) A transfer deed was presented in which the amount of stated consideration was lower than the prevailing market value of the shares of Bright Ltd., a listed company. The transfer deed was otherwise in order and the stamp duty was paid in accordance with the prevailing market value. Advise the company.

Answer 29. (a)

No, the public company has not contravened any provisions of the Companies Act, 1956. No return of allotment of the shares re-issued to be filed with the Registrar. Such re-issue in fact cannot be called allotment. According to the provisions of section 75(5) of the Act, forfeited shares can be further re-issued at a premium without any legal formalities. The issue of forfeited shares is treated as a sale and not as allotment of shares.

Answer 29. (b)

Under section 543, the court has the power to initiate misfeasance proceedings against any delinquent director or any other officer of the company.

The Supreme Court has held that misfeasance proceedings initiated under section 543 against a director of a company in winding up can be continued on his death against his legal heirs for the purpose of determining and

Revisionary Test Paper_Final_Syllabus 2008_June 2013

declaring the loss or damage caused to the company. The amount declared to be due in the misfeasance proceedings shall be realized from the estate of the deceased in the hands of his legal representatives [Official Liquidator v. Parthasarathi Sinha (1983) 53 Comp Cas 163 (SC)]. However, such liability shall not extend to any sum beyond the value of the estate of the deceased in their hands.

Answer 29. (c)

Section 108 of the Companies Act, 1956 provides that a company shall not register a transfer of shares in or debentures of the company, unless a proper instrument of transfer duly stamped and executed by or on behalf of the transferor and by or on behalf of the transferee and specifying the name, address and occupation, if any of the transferee, has been delivered to the company along with the certificates of shares/ debentures on the letter of allotment. Also section 111A of the Act provides that the shares or debentures or any interest therein of a public company shall be fully transferable. A transfer deed shall be deemed to be duly stamped if the stamp duty has been paid by affixing and cancelling special adhesive stamps bearing the inscription 'share transfer'. The duty will have to be calculated with reference to the market value of the share on the date of the transaction. In the present case, the deed being in order and duly stamped, the instrument of transfer cannot be rejected simply because the consideration stated is below market price; as the stamp duty is paid based on the market price. Thus, it is advisable to register the transfer, if it is otherwise in order.

Q. 30. (a) Examine with reference to the relevant provisions to the Competition Act, 2002 whether a person purchasing goods not for personal use, but for resale can be considered as a 'consumer'.

(b) The Articles of Association of a company fixed 3 as the quorum for a meeting of the Board. At a meeting of the Board, all the 5 directors were present. They allotted the shares of the company to 3 of the directors. Is it valid?

(c) Whether grant of shares by Company to its wholetime Director free of cost or at a discount to market price under a duly sanctioned ESOP scheme of the company amount to increase in the remuneration of the wholetime Director?

Answer 30. (a)

The given problem relates to section 2 (f) of the Competition Act, 2002. As per section 2 (f) 'consumer' means any person who –

- (i) Buys any goods for a consideration which has been paid or promised or partly paid and partly promised, or under any system of deferred payment and includes any user of such goods other than the person who buys such goods for consideration paid or promised or partly paid or partly promised, or under any system of deferred payment when such use is made with the approval of such person, whether such purchase of goods is for resale or for any commercial purpose or for personal use ;
- (ii) Hires or avails of any services for a consideration which has been paid or promised or partly paid and partly promised, or under any system of deferred payment and includes any beneficiary of such services other than the person who hires or avails of the services for consideration paid or promised, or partly paid and partly promised, or under any system of deferred payment, when such services are availed of with the approval of the first-mentioned person whether such hiring or availing of services is for any commercial purpose or for personal use.

Thus, a person who purchases goods for resale or for any commercial purpose (and not for personal use) is also a 'consumer'.

Answer 30. (b)

The provisions in regard to quorum for a Board meeting are contained in section 287 of the Companies Act, 1956. It is provided therein that the quorum for a Board meeting shall be one-third of the total number of directors of a company (any fraction contained in that one-third shall be rounded off as one) or two directors whichever is higher. It is further provided that where at any time the number of interested directors exceeds or is equal to two-thirds of the total strength, the number of disinterested directors present at the meeting being not less than two shall form the quorum. The company is, however, free to fix a higher quorum for the Board meeting.

Viewed in the context of the above provisions, the company has fixed the quorum for a Board meeting at 3. In this case, out of five directors present at the meeting, the number of interested directors is three. As such, the remaining two directors who are not interested do not constitute a quorum and hence the meeting cannot be validly

Revisionary Test Paper_Final_Syllabus 2008_June 2013

convened. Therefore, the allotment of shares at the aforesaid meeting is not valid.

The proviso to section 287(2) cannot also be availed of as the interested directors, who are three, are not equal to or more than two-thirds of the total strength of directors. The figure representing two-thirds will be 4 by rounding off fraction, if any. Hence, it can be assumed that the allotment made at the Board meeting will not be valid.

Answer 30. (c)

The grant of shares under Employees Stock Options Scheme does not entail any cash outgo from the Company. Hence, such shares cannot be deemed to have increased the remuneration of a wholetime director. Since the company does not incur an expenditure in allotting the shares it will not come within Explanation (b) of Section 198 and will not be a perquisite or remuneration.

