Paper 14: Advance Financial Management

Answer Question No.1 which is compulsory

Total Allowed: 3hours **Full Marks: 100**

1.

(a) State the objective and functions of State Co-operative Bank. [3]

(b) What makes Commodity Trading attractive? [3]

(c) An extract from exchange rate list of a Mumbai based bank is given below :
`/$: 62.30: 64.25

I. **How many $ will it cost for a foreign tourist visiting India to purchase `9,345 worth of painting?**

II. **How much will Mr. Nitesh in Mumbai have to spend in rupees, to purchase a Sony Camcorder worth $ 325 ? [5]**

(d) If the risk free rate of interest (R_f) is 10%, and expected return on market portfolio (R_m) is 15%, ascertain expected return of the portfolio if portfolio betas are — (i) 0.10 and (ii) 0.30. [4]

(e) What are the differences between Factoring and Securitisation? [5]

Answer:

(a) Objective and functions of State Cooperative Banks

The chief objectives of State Cooperative Bank are to coordinate the work of the Central Banks, and to link Cooperative Credit Societies with the general money market and the Reserve Bank of India.

These banks work as real pivots of the Cooperative movement in the state. They act as initial source of credit for seasonal and urgent needs of their members. Their main functions are:-

(i) They act as banker's bank to the Central Cooperative Banks in the districts. These banks not only mobilise the financial resources needed by the societies, but they also deploy them properly among the various sectors of the movement.

(ii) They coordinate their own policies with those of the cooperative movement and the government.

(iii) They form a connecting link between the cooperative credit societies and the commercial money market and the RBI.

(iv) They formulate and execute uniform credit policies for the cooperative movement as a whole.

(v) They promote the wise of cooperation in general by granting subsidiaries to the Central Cooperative Banks for the development of cooperative activities.

(vi) They act as a clearing house for capital i.e., money flows from, the Apex Banks to the Central Banks and from the Central Banks to the rural societies and from them to individual borrowers.

(vii) They supervise, control and guide the activities of the Central Bank through regular inspections by their inspection staff and rectify the defects in their work. Thus, they act as their friend, philosopher and guide.

(viii) They also perform general utility functions such as issuing drafts, cheques and letters of credit on various centres and thereby help remittance of funds.

(ix) They collect and discount bills with the permission of the Registrar.

(b) The following are the reason which makes Commodity Trading attractive -

(i) A good low-risk portfolio diversifier

(ii) A highly liquid asset class, acting as a counterweight to stocks, bonds and real estate.

(iii) Less volatile, compared with, equities and bonds.

(iv) Investors can leverage their investments and multiply potential earnings.

(v) Better risk-adjusted returns.

(vi) A good hedge against any downturn in equities or bonds as there is

(vii) Little correlation with equity and bond markets.

(viii) High co-relation with changes in inflation.

(ix) No securities transaction tax levied.

(c) The foreigner will have to pay

(`9,345/62.30 or) =$ 150 for the painting

Mr. Nitesh will have to pay

($ 325 × 64.25) = `20,881(approx)

(d) Rule for determining Expected Return on Portfolio under CAPM

Under Capital Asset Pricing Model (CAPM) $R_p = R_f + (\beta X (R_m - R_f)$

Notation	Particulars	Value
R_p	Expected Return on Portfolio	To be computed
R_f	Risk Free Rate of Interest/ Return	10%
β	Portfolio Beta	0.10/0.30

R_m	Expected Return on Market Portfolio	15%

Computation of Expected Return on Portfolio

Beta	Expected Return = $R_f + \beta_x (R_m - R_f)$
0.10	= 10% + 0.10(15%-10%)=10.5%
0.30	= 10% + 0.30(15%-10%)=11.5%

(e) Difference between Factoring and Securitisation

Basis	Factoring	Securitisation
Range of Investors	In Factoring, only one party is involved.	Issues of securitisation are sold to a wide range of investors.
Issue Expenses	No issue expenses are involved in Factoring.	Issue expenses are involved.
Recourse	Factoring may be with or without Recourse.	Securitisation is generally without recourse.
Receipt of payment	Payment from the Factor comes in after a time lag, during which the Factor charges interest for any advances allowed.	In securitization, cash is generally received as soon as the issue is placed.
Other Services	Services such as credit checking and ledger maintenance are offered along with Factoring.	Securitization does not carry any such services with it.
Time Period	Short-term receivables are factored.	Long term receivables and Short-term receivables can be securitized.
Credit Rating	Credit Rating is not compulsory.	Credit rating is compulsory.
Availability	Factoring Resources are readily available.	Investors of securitized instruments are to be identified.
Mature of Receivables	Only existing receivables can be factored.	Future and existing receivables can be securitized.

Section A

(Answer any two of the following)

2.

(a) Explain the responsibilities of the NBFCs accepting public deposits with regard to submission of returns and other information to RBI.

(b) Explain the function of Forward market commission of India.

[6+6]

Answer: 2 (a)

The NBFCs accepting public deposits should furnish to RBI

(i) Audited balance sheet of each financial year and an audited profit and loss account in respect of that year as passed in the annual general meeting together with a copy of the report of the Board of Directors and a copy of the report and the notes on accounts furnished by its Auditors;
(ii) Statutory Quarterly Return on deposits - NBS 1;
(iii) Certificate from the Auditors that the company is in a position to repay the deposits as and when the claims arise;
(iv) Quarterly Return on prudential norms-NBS 2;
(v) Quarterly Return on liquid assets-NBS 3;
(vi) Annual return of critical parameters by a rejected company holding public deposits – NBS 4
(vii) Half-yearly ALM Returns by companies having public deposits of ` 20 crores and above or asset size of ` 100 crores and above irrespective of the size of deposits holding
(viii) Monthly return on exposure to capital market by deposit taking NBFC with total assets of ` 100 crores and above–NBS 6; and
(ix) A copy of the Credit Rating obtained once a year

Answer: 2 (b)

Functions of Forward market commission of India are as follows:

(i) To advice the Central Government in respect of the recognition or withdrawal of recognition from any association. It also advices government about any other matter arising out of the administration of this act.
(ii) Second function of the act includes the task of keeping forward market s under observation and take necessary actions. The actions taken should be according to powers given to the commission by the "Forward Contract Regulation Act".
(iii) To collect information regarding the trading conditions in respect of goods (to which any of the provisions of this Act is made applicable) including information regarding supply, demand and prices. And publish information whenever the Commission thinks it necessary, It also performs the task of submitting to the Central Government periodical reports on the operation of this Act and on the working of forward markets relating to such goods.
(iv) To make recommendations generally with a view to improving the organization and working of forward markets.
(v) To undertake the inspection of the accounts and other documents of [any recognized association or registered association or any member of such association] whenever it considers it necessary.
(vi) To perform such specified duties and exercise assigned powers by the "Forward Contract Regulation Act".

3.

(a) Explain the silent features and advantages of commercial paper.

(b) Ram invested in a Mutual Fund when the Net Asset Value was `12.65. 60 Days later the Asset Value per unit of the fund was `12.25. In the meantime, Ram had received a cash dividend of `0.50 and a Capital Gain distribution of `0.30. Compute the monthly return.

[7+5]

Answer: 3 (a)

Commercial Paper- Salient Features

- Commercial Papers are issued by companies in the form of usance promissory note, redeemable at par to the holder on maturity.
- The tangible net worth of the issuing company should be not less than `4 crores.
- Working capital (fund based) limit of the company should not be less than `4 crores.
- Credit rating should be at least equivalent of P-2 of CRISIL/P2/PP2/D2 or higher from any approved rating agencies and should be more than 2 months old on the date of issue of CP.
- Corporates are allowed to issue CP up to 100% of their fund based working capital limits.
- It is issued at a discount to face value.
- CP attracts stamp duty.
- CP can be issued for maturities between 15 days and less than one year from the date of issue.
- CP may be issued in the multiples of `5 lakh.
- No prior approval of RBI is needed to issue CP and underwriting the issue is not mandatory.
- All expenses (such as dealers' fees, rating agency fee and charges for provision of stand-by facilities) for issue of CP are to be borne by the issuing company.

Commercial Paper- Advantages

(i) Simplicity: Documentation involved in issue of Commercial Paper is simple and minimum.

(ii) Cash Flow Management: The Issuer Company can issue Commercial Paper with suitable maturity periods (not exceeding one year), tailored to match the cash flows of the Company.

(iii) Alternative for bank finance: A well-rated Company can diversify its sources of finance from Banks, to short-term money markets, at relatively cheaper cost.

(iv) Returns to Investors: CP's provide investors with higher returns than the banking system.

(v) Incentive for financial strength: Companies which raise funds through CP become well-known in the financial world for their strengths. They are placed in a more favourable position for raising long-term capital also. So, there is an inbuilt incentive for Companies to remain financially strong.

Answer: 3 (b)

(i) Dividend = ` 0.50

(ii) Capital Gain Distribution = ` 0.30

(iii) Capital Appreciation = (` 0.40) (Closing NAV `12.25 Less Opening NAV `12.65)

(iv) Returns= [Dividend + Capital Gain Distribution+Capital Appreciation] ÷ Opening NAV

= [` 0.50 + ` 0.30 – ` 0.40] ÷ `12.65

= `0.40 ÷ `12.65= 3.16%

(v) Annualized Return = Return x 365 ÷ Period = 3.16% X 365 Days ÷ 60 Days = 19.22% p.a

(vi) Monthly Return = 19.22% ÷12 = 1.60% per month

4.

(a) **Today is 24th March. A refinery needs 1,050 barrels of crude oil in the month of September. The current price of crude oil is `3,000 per barrel. September futures contract at Multi Commodity Exchange (MCX) is trading at `3,200. The firm expects the price to go up further and beyond `3,200 in September. It has the option of buying the stock now. Alternatively it can hedge through futures contract.**

I. If the cost of capital, insurance, and storage is 15% per annum, examine if it is beneficial for the firm to buy now?

II. **Instead, if the upper limit to buying price is `3,200 what strategy can the firm adopt?**

III. If the firm decides to hedge through futures, find out the effective price it would pay for crude oil if at the time of lifting the hedge

- **the spot and futures price are `2,900 and `2,910 respectively,**
- **the spot and futures price are `3,300 and `3,315 respectively.**

(b) **What are the differences between Capital Market and Money Market? [7+5]**

Answer: 4 (a)

(i) If cost of carry (including interest, insurance, and storage) is 15%, the fair price of the futures contract is $s_0 \times e^{-rt} = 3,000 \times e^{-6/12 \times 0.15}$ = `3,233.65.

It implies that the firm buys crude oil today to be used after six months it would effectively cost `3,233.65 per barrel.

(ii) Since futures are trading at `3,200 it can lock-in the price of around `3,200 through a long hedge. Under long hedge the firm would buy the futures on crude oil today and sell it six months later while simultaneously meeting the physical requirements from the market at the price prevailing at that time. Irrespective of price six months later, the firm would end up paying a price of around `3,200.

(iii) If the firm adopts the strategy as mentioned in (b), the effective price to be paid by the firm in cases of rise and fall in spot values is shown below:-

Quantity of crude oil to be hedged	1,075 barrels
Size of one futures contract	100 barrels
No. of futures contracts bought 1,075/100	11 contracts (Rounded)
Futures price	` 3,200
Exposure in futures 3,200 x 11 x 100	` 35,20,000

Six months later the firm would unwind its futures position and buy the requirement from the spot market.

	`	`
Futures sold at price	2910	3315
Amount of futures sold	32,01,000	36,46,500
Gain/Loss on futures (11 contracts)	(3,19,000)	1,26,500
Spot Price	2,900	3,300
Actual Cost of buying(1075 barrels)	31,17,500	35,47,500
Effective cost of buying	34,36,500	34,21,000
Effective Price	3,197	3,182

Answer: 4 (b)

Differences between Capital Market and Money Market:

Aspect	Capital Market	Money Market
Type of	Debt and Equity Instruments.	Debt Instruments only.
Tenor of	Medium and Long Term Instruments.	Short Term usually less than one
Examples	Equity Shares, Preference Stock, Debenture Stock, Zero Coupon Bonds, etc.	Treasury Bills, Certificates of Deposits, Commercial Papers, Banker's Acceptance.
Classification	Capital Market is further classified into Primary Market and Secondary	There is no such further classification.
Participants	Retail Investors, Institutional Investors (Mutual Funds), Financial Institutions, etc.	Banks, Financial Institutions, Reserve Bank of India, Government.
Risk	Low credit and market risk involved.	High credit and market risk.
Regulator	SEBI	RBI

Section – B
(Answer any one of the following)

5.

(a) **Explain the advantages & disadvantages of Book Building process.**

(b) **Ranbir has `60 Lakhs in hand. He is contemplating investment in the shares of Super Star Accessories Ltd (SSA) which is being traded at ` 200 per share.**

Ranbir expects a dividend declaration of `37 per share 3 months hence and a market price of `185 per share at the end of the year, at which Ranbir plans to sell of all his holdings.

If the discount rate is 12% p.a., what will be the course of action if Ranbir discounts his cash flows under continuous compounding approach and monthly discounting approach?

(c) **A sold in June Nifty futures contract for `3,60,000 on June 15, For this he had paid an initial margin of `34,000 to his broker. Each Nifty futures contract is for the delivery of 200 Nifties. On June 25, the index was closed on 1850. How much profit / loss A has made?**

(d) Your Company has to make a US $ 1 Million payment in three month's time. The dollars are available now. You decide to invest them for three months and you are given the following information.

- **The US deposit rate is 8% p.a.**
- **The sterling deposit rate is 10% p.a.**
- **The spot exchange rate is $ 1.80 / pound.**
- **The three month forward rate is $ 1.78/ pound.**

I. **Where should your company invest for better results?**
II. **Assuming that the interest rates and the spot exchange rate remain as above, what forward rate would yield an equilibrium situation?**
III. **Assuming that the US interest rate and the spot and forward rates remain as in the original question, where would you invest if the sterling deposit rate were 14% per annum?**
IV. **With the originally stated spot and forward rates and the same dollar deposit rate, what is the equilibrium sterling deposit rate? [5+5+5+5]**

Answer: 5 (a)

Advantages of Book Building:

(i) The book building process helps in discovery of price & demand.

(ii) The costs of the public issue are much reduced.

(iii) The time taken for the completion of the entire process is much less than that in the normal public issue.

(iv) In book building, the demand for the share is known before the issue closes. In fact, if there is not much demand, the issue may be deferred.

(v) It inspires investor's confidence leading to a large investor universe.

(vi) Issuers can choose investors by quality.

(vii) The issue price is market determined.

Disadvantages of Book Building:

(i) There is a possibility of price rigging on listing as promoters may try to bail out syndicate members.

(ii) The book building system works very efficiently in matured market conditions. But, such conditions are not commonly found in practice.

(iii) It is appropriate for the mega issues only.

(iv) The company should be fundamentally strong & well known to the investors without it book building process will be unsuccessful.

Answer: 5 (b)

Time	Nature of Cash Flow	Cash Flow	Continuous Compounding		Monthly Discounting	
			PV Factor at 12%	Discounted Cash Flow	PV Factor at 12%	Discounted Cash Flow
(1)	(2)	(3)	(4) = $[1 \div e^{0.12 \times (1)/12}]$	(5) = (3) x (4)	(6)= $[1 \div (1+12\%/12)^{(1)}]$	(7) = (3) x (6)
0	Investment (Outflow)	(60,00,000)	1 $[1 \div e^{0.12 \times 0/12}]$	(60,00,000)	1	(60,00,000)
3	Dividend Inflow)	11,10,000	0.9704 $[1 \div e^{0.12 \times 3/12}]$	10,77,144	0.9706 $[1 \div 1.012^{3}]$	10,77,366
12	Sale (Inflow)	55,50,000	0.8869 $[1 \div e^{0.12 \times 12/12}]$	49,22,295	0.8874 $[1 \div 1.012^{12}]$	49,25,070
	Net Present Value			(561)		2,436

Conclusion: If Ranbir follows monthly discounting option, he will buy the shares of Super Star Accessories Ltd.

Note: No. of share 60,00,000/200 = 30,000 Shares.

Answer: 5 (c)

(i) Sale Price per NIFTY Future

= Contract Amount ÷ Lot size

= `3,60,000 ÷ 200

= `1,800

(ii) Futures Price as on Jan 25

= ` 1,850

(iii) Loss on Sale of Futures Contract

= (1,850 - 1,800) x 200

= `10,000.

Answer: 5 (d)

(i) Invest for better results

Since the US $ are available now, amount can be invested in

- US $ Deposits @8% p.a. or
- Converted into Sterling Currency at the Spot Rate and invested in UK Deposits.

Alternative 1

Particulars	Value
Invest in $ deposits	@8% p.a. for 3 months.
Income = $ 10,00,000 x 8/100 x 3/12	$ 20,000

	Particulars	Value
1.	Convert Dollars into Pounds at Spot Rate (US $ 10,00,000 ÷ 1.80)	£5,55,556
2.	Invest £5,55,556 in Sterling Deposits at the rate of 10% p.a. for 3 months interest on £5,55,556 @ 10% for 3 months = £5,55,556 10% × 3/12	£13,889
3.	Total Cash Inflow at the end of 3 months [(2)+(3)]	£5,69,445
4.	Amount earned in US $ = [(4) × 1.78 (Forward Rate)]	US $ 10,13,612
5.	Gain in US $ [10,13,612 – 10,00,000]	US $13,612

Gain in Alternative 1 is higher. Hence, company should invest in US Deposits.

(ii) Equilibrium Forward Rate 3 Months Forward; (for 1 £)

= Spot Rate X [(1 + US Interest Rate for 3 Months) / (1 + Sterling Interest Rate for 3 Months]

= $ 1.8 X [(1 + 8%/4) / (1 + 10%/4)] = $1.7912/ £ [Interest Rate Parity Method]

Equilibrium 3 months Forward Rate = $ 1.7912 / £

(iii) Investment if Sterling Deposit: Rate is 14%

Particulars	Amount
1. Amount invested in Sterling Deposit Rate	£ 5,55,556
2. Interest Income @ 14% for 3 months £ 5,55.556 x 14 % x 3 / 12	£ 19,444
3. Total Cash Inflow at the end of 3 months [(2)+ (3)]	£ 5,75,000
4. Amount earned in US $ = [(4) x 1.78 (Forward Rate)]	US $ 10,23,500

5. Gain in US $ [10,23,500 - 10,00,000] US $ 23,500

Conclusion: Gain is highest of all the considered alternatives, therefore amount should be invested in Sterling Deposits @ 14%.

(iv) Equilibrium Sterling Deposit Rate Franc Interest Rate [6 Months] = Assuming Sterling Interest Rate = x, applying the same in Interest Rate Parity Formula for determining Forward Rate —

$$£\ 1 = \text{Spot Rate} \times \frac{(1+\text{US Rate for 3 Months})}{(1+\text{Sterling Interest Rate for 3 Months})}$$

1 £ = $1.80 X (1 + 8%/4) / (1 + x/4)

1 £ = $1.80 x (1 + 0.02) / (1 + x/4);

$1.78 = $1.80 x (1 + 0.02)/ (1 + x/4)

1+ x/4 = $ 1.80 X 1.02/$ 1.78

X/4 = 1.03146 -1 = 0.03146 or 3.146%

x = 12.58%

Equilibrium Sterling Interest Rate = 12.58%

6.

(a) What are currency futures? List the steps involved in the technique of hedging through futures.

(b) Following information relates to Upkar Ltd, which manufactures some parts of an electronics device which are exported to USA, Japan and Europe on 90 days credit terms.

Cost and Sales information —

Particulars	Japan	USA	Europe
Variable Cost per Unit	` 225	` 395	` 510
Export sale price per Unit	Yen 650	US$10.23	Euro 11.99
Receipts from sale due in 90 Days	Yen 78,00,000	US S 1,02,300	Euro 95,920

Foreign exchange rate information

Particulars	Yen/`	US$/`	Euro/`
Spot Market	2.417-2.437	0.0214-0.0217	0.0177- 0.0180
3-Months Forward	2.397-2.427	0.0213 - 0.0216	0.0176 - 0.0178
3 months spot	2.423-2.459	0.02144 - 0.02156	0.0177- 0.0179

Advice Upkar Ltd by calculating average contribution to sales ratio whether it should hedge its foreign currency risk or not.

(c) Given the following information—

BSE Index	**50,000**
Value of Portfolio	**`1,01,00,000**
Risk Free Interest Rate	**9% p.a.**
Dividend Yield on Index	**6% p.a.**
Beta of Portfolio	**2.0**

We assume that a futures contract on the BSE index with 4 months maturity is used to hedge the value of portfolio over next 3 months. One future contract is for delivery of times the index. Based on the information, Calculate — (i) Price of future contract, (ii) The gain on short futures position if index turns out to be 45,000 in 3 months. [5+10+5]

Answer: 6 (a)

A currency futures contract is a derivative financial instrument that acts as a conduct to transfer risks attributable to volatility in prices of currencies. It is a contractual agreement between a buyer and a seller for the purchase and sale of a particular currency at a specific future date at a predetermined price. A futures contract involves an obligation on both parties to fulfil the terms of the contract. A futures contract can be bought or sold only with reference to the USD.

There are six steps involved in the technique of hedging through [redacted]

i. Estimating the target income (with reference to the spot [redacted] given date.)
ii. Deciding on whether Futures Contracts should be bought or sold.
iii. Determining the number of contracts (since contract size is standardised).
iv. Identifying profit or loss on target outcome.
v. Closing out futures position and
vi. Evaluating profit or loss on futures.

Answer: 6 (b)

(i) Computation of Exchange Rate (Direct Quotes)

Particulars	` /Yen		` /USD		` / Euro	
	Bid Rate	Ask Rate	Bid Rate	Ask Rate	Bid Rate	Ask Rate
Spot Market	0.410 (1/2.437)	0.414 (1/2.417)	46.08 (1/0.0217)	46.73 (1/0.0214)	55.56 (1/0.0180)	56.50 (1/0.0177)
3-Months Forward	0.412 (1/2.427)	0.417 (1/2.397)	46.30 (1/0.0216)	46.95 (1/0.0213)	56.18 (1/0.0178)	56.82 (1/0.0176)
3 months spot	0.407 (1/2.459)	0.413 (1/2.423)	46.38 (1 0.02156)	46.64 (1/0.02144)	55.87 (1/0.0179)	56.50 (1/0.0177)
Higher of 3 – Months forward rate and Spot rate [Bid]	0.412 [Forward]		46.38 [Spot]		56.18 [Forward]	

Bid rate is relevant since the export will be selling Foreign Currency and buying Indian Rupees.

(ii) Computation of Contribution per Unit in Foreign Currency [Based on 3-Months Rate]

[3-Months Forward vs. 3-Months' Spot]

Particulars	Japan		USA		Europe	
	Spot	Forward	Spot	Forward	Spot	Forward
(a) Variable Cost per Unit	` 225.00	` 225.00	` 395.00	` 395.00	` 510.00	` 510.00
(b) Export sale price per Unit [Foreign Currency]	Yen 650	Yen 650	USD 10.23	USD 10.23	Euro 11.99	Euro 11.99
(a) Relevant Bid Rate	` 0.407	` 0.412	` 46.38	` 46.30	` 55.87	` 56.18
(b) Export Sale Proceeds p.u. **[b) x (c)]**	` 264.55	` 267.80	` 474.47	` 473.65	` 669.88	` 673.60
(c) Contribution per Unit **[(d) - (a)]**	` 39.55	` 42.80	` 79.47	` 78.65	` 159.88	` 163.60
(d) Contribution Ratio **[(e) ÷ (d)]**	15.0%	16.0%	16.7%	16.6%	23.9%	24.3%
(e) Advice	Hedge using Forward Market Cover		Do Not Hedge		Hedge using Forward Market Cover.	

Recommendation: The Company should hedge is foreign currency risk / exposure in Japanese Yen and Euro, since by hedging, the Company stands to gain a higher Contribution to Sales Ratio and therefore, higher profit margin. However, for sale to USA, the Company need not hedge its exposure in Dollars, since movement in Spot Market is more beneficial than hedging through Forward Market Cover.

Answer: 6 (c)

i. Computation of Price of Futures Contract

Securities of R Ltd.

Spot Price [S_x]	`50,000
Dividend Yield Expected [y]	6% or 0.06
Tenor / Time Period [t] in Years	4 Months or 0.3333 Year
Risk Free Interest Rate [r]	9% or 0.09
Price of Futures Contract [TFP_X] $TFP_X = S_X X e^{(r-y)xt}$	= ` 50,000 X $e^{(0.09 - 0.06)x0.3333}$ = ` 50,000 X $e^{0.03 \times 0.3333}$ = `50,000 x $e^{0.01}$ = `50,000 X 1.0101 = `50,505

Therefore, price of the Futures Contract is ` 50,505 or ` 50,500 (Approx)

ii. Gain on Short Futures Position

Computation of No. of Contracts to be entered into:

Particulars	Value
Portfolio Value	` 101,00,000
4-Month's Futures Price per Unit of BSE Index	` 50,500
No. of Units per BSE Index Futures Contract	50
Value per BSE Index Futures Contract [50 Units X `50,500 per Unit]	` 25,25,000
No. of Contract to be entered [Portfolio Value X Beta of Portfolio w.r.t Index ÷ Value per BSE Index Futures Contract] = [`101,00,000 X 2.0 ÷ `25,25,000]	8 Contracts

Computation of Gain on Short Futures Position

Particulars	Value
Position	SELL
Contracted Sale Price per Unit of BSE Index	` 50,500
Less: Index Position in 3-Months	` 45,000
Gain per Unit of BSE Index Future	` 5,500
No. of Units per Contract	[redacted]
Gain per Contract [`5,500 X 50 Units]	` 2,75,000
No. of Contract entered into	6
Total Gain [8 Contracts X `2,75,000 per Contract]	22,00,000

Total Gain on Short Futures Position in 3 Months is ` 22,00,000.

Section C

(Answer any one of the following)

7.

(a) An investor has two portfolios known to be on minimum variance set for a population of three securities R, S and T below mentioned weights —

	W_R	W_S	W_T
Portfolio X	**0.30**	**0.40**	**0.30**
Portfolio Y	**0.20**	**0.50**	**0.30**

It is supposed that there are no restrictions on short sales.

I. **What would be the weight for each stock for a portfolio constructed by investing `6,000 in Portfolio X and `4,000 in Portfolio Y?**

II. **Suppose the investor invests `5,000 out `10,000 in Security R. How he will allocate the balance between security S and T to ensure that his portfolio is on minimum variance set?**

(b) **The risk free return is 8 per cent and the return on market portfolio is 14 per cent. If the last dividend on Share 'A' was `2.00 and assuming that its dividend and earnings are expected to grow at the constant rate of 5 per cent. The beta of share 'A' is 2.50. Compute the intrinsic value of share A. [8+8]**

Answer: 7 (a)

(i) Investment in Individual Securities

Security	Portfolio X	Portfolio Y	Total	Weight
R	6,000 x 0.30 = 1,800	4,000 x 0.20 = 800	2,600	2,600 10,000 = 0.26
S	6,000 x 0.40 = 2,400	4,000 x 0.50 = 2,000	4,400	4,400 10,000 = 0.44
T	6,000 x 0.30 = 1,800	4,000 x 0.30 = 1,200	3,000	[redacted]
	6,000	4,000	10,000	1.0000

(ii) Investment Strategy to Ensure Minimum Variance

Given the following equations $W_R = 0.50$ (`5,000 ÷ `10,000)

$$W_R + W_S + W_T = 1$$

Therefore it naturally follows that

$$W_T + W_S = 0.50 \ldots \quad (1)$$

A simple linear equation can be establishing an equation between two variables W_R and W_S or the Variables W_S and W_T in the given manner—

$$W_T = a + bW_S$$

Substituting the values of W_R & W_S from the data given (Portfolio X and Y), we get -

$$0.30 = a + b \times 0.40$$
$$0.30 = a + b \times 0.50$$
$$b = 0$$
$$a = 0.30$$
$$W_T = 0.30 - 0W_S$$

or

$$W_T + 0W_S = 0.30 \ldots \quad (2)$$

Therefore solving (1) and (2) we get $W_T = 0.30$ and $W_S = 0.20$

Conclusion: Allocation of Funds -

R = ` 5,000 (Given)

S = 0.20 x ` 10,000 = ` 2,000.

T= 0.30 x ` 10,000 = ` 3,000.

Alternatively,
Since the Proportion of Investment in T is 0.30 and is constant across both the Portfolio, any linear equation drawn from the Data given would result in the Weight of T being a constant 0.30.
Therefore W_R= 0.50 (Given), W_T = 0.30 (Constant), therefore W_S=0.20 (W_S= 1- 0.50 - 0.30 = 0.20).

Answer: 7 (a)

Basic Data

Notation	Particulars	Value
	Beta of Share	2.5
β_A		
R_M	Market Return	14%
R_F	Risk Free Rate of Return	8%
R	Growth rate of Dividends	5%
D_0	Last Year's dividend	`2

(i) Computation of Expected Return

Expected Return $[E(R_A)] = R_F + [\beta_A X (R_M - R_F)]$

= 0.08 + [2.5 x (0.14 - 0.08)]

= 0.08 + 2.5 (0.14 - 0.08) = 0.08 + 0.15 = 0.23

i.e., K_e = 23%

(ii) Intrinsic Value of share = $D1 \div (K_e - g) = D_0 X (1+ g) \div (K_e - g)$

= 2 x (1+0.05) ÷ (0.25 - 0.05) = ` 11.67

The Intrinsic Value of share A is ` 11.67.

8.

Answer to PTP_Final_Syllabus 2012_Dec2013_Set 2

(a) **A Company has a choice of investments between several different Equity Oriented Funds. The Company has an amount of `1 Crore to invest. The details of the mutual funds are as follows -**

Mutual Funds	M	N	O	P	Q
Beta	1.7	1.0	0.9	2.1	0.7

Required:

I. **If the Company invests 20% of its investments in the first two mutual funds, and an equal amount in the mutual funds O, P and Q what is beta of the portfolio?**

II. **If the company invests 15% of its investments in O, 15% in M, 10% in Q and the balance in equal amount in the other two mutual funds, what is the beta of the portfolio?**

III. **If the expected return of the market portfolio is 14% at a beta factor of 1.0, what will be the portfolios' expected return in both the situations given above?**

(b) Calculate the market sensitivity index, and the expected return on the Portfolio from the following data;

Standard deviation of an asset	**4.5%**
Market standard deviation	**4.0%**
Risk - free rate of return	**15.0%**
Expected return on market Portfolio	**17.0%**
Correlation coefficient of Portfolio with market	**0.89**

What will be the expected return on the Portfolio? If Portfolio beta is 0.5 and the risk free return is 10%. [8+8]

Answer: 8 (a)

i. Investment in M and N at 20% each, equal proportion in O, P and Q

Mutual fond	Proportion of Investment	Beta of the Fund	Proportion X Fund Beta
(1)	(3)	(4)	(5) = (3)x(4)
M	0.2	1.7	0.2 x 1.7 = 0.34
N	0.2	1.0	0.2 x 1.0 = 0.20
O	0.2	0.9	0.2 x 0.9 = 0.18
P	0.2	2.1	0.2 x 2.1 = 0.42
Q	0.2	0.7	0.2 x 0.7 = 0.14
Portfolio Beta			1.28

Investment in O, P & Q = (1 - Investment in M and N) ÷ 3 = (1 - 0.2 - 0.2) ÷ 3 = 0.6 ÷ 3 = 0.2 or 20%

ii. Situation B: Investment in M at 15%, O at 15% and P at 10%, equal proportion in N and P

Mutual fund	Proportion of Investment	Beta of the Fund	Proportion X Fund Beta
(1)	(3)	(4)	(5) = (3)X(4)
M	0.15	1.7	0.15 x 1.7 = 0.255
N	0.30	1.0	0.30 x 1.0 = 0.300
O	0.15	0.9	0.15 x 0.9 = 0.135
P	0.30	2.1	0.30 x 2.1 = 0.630
Q	0.10	0.7	0.10 x 0.7 = 0.070
Portfolio Beta			1.390

Investment in N and P = (1 - Investment in M, O and Q) ÷ 2

= (1- 0.15 - 0.15 - 0.1) ÷ 3 = 0.6 ÷ 2 = 0.3 or 30%

iii. Expected Return from Portfolio

Note/Assumption: In the absence of Risk Free Rate of Return (RF), it is assumed that expected return from portfolio is to be computed using Market Ma[redacted] free return, and the entire fund return moves in line with the marke[redacted] applicable.

Expected Return = Market Return X Portfolio Beta.

Situation	Return in %	Return in `
A	14% X 1.28 = 17.92%	14 X 17.92% = 17.92 lakhs
B	14% X 1.39 = 19.46%	14 X 19.46% = 19.46 lakhs

Answer: 8 (b)

(i) Basic Data for computation of Expected Return

Notation	Particulars	Case (a)	Case(b)
σ_P	Standard Deviation of asset	4.5%	4.5%
σ_M	Market Standard Deviation	4.0%	4.0%
ρ_{MP}	Correlation co-efficient of portfolio with market	0.89	0.89
R_F	Risk free rate of return	15%	10%
R_M	Expected return on market Portfolio	17%	17%
β_P	Portfolio Beta	To be ascertained	0.5

(ii) Computation of Expected Return

	Case (a)	Case (b)

Portfolio Beta $\beta_P = \sigma_P \div \sigma_M \times \rho_{MP}$	4.5 ÷ 4 × 0.89 = 1.001	0.5
Exacted Return = $R_F + \beta_P \times (R_M - R_F)$	0.15 + [1.001 x (0.17 - 0.15)] = 17.002%	0.10 +[0.5x(0.17 - 0.10)] = 13.5%

Section D

(Answer any one of the following)

9.

(a) **A firm has an investment proposal, requiring an outlay of ` 80,000. The investment proposal is expected to have two years economic life with no salvage value. In year 1, there is a 0.4 probability that cash inflow after tax will be ` 50,000 and 0.6 probability that cash inflow after tax will be ` 60,000. The probability assigned to cash inflow after tax for the year 2 are as follows:**

The cash inflow year 1	**` 50,000**		**` 60,000**	
The cash inflow year 2	**Probability**		**Probability**	
	` 24,000	**0.2**	**` 40,000**	**0.4**
	` 32,000	**0.3**	**`**	
	` 44,000	**0.5**	**` 60,000**	**0.1**

The firm uses an 8% discount rate for this type of investment.

Required:

I. **Construct a decision tree for the proposed investment project and calculate the expected net present value (NPV).**

II. **What net present value will the project yield, if worst outcome is realized? What is the probability of occurrence of this NPV?**

III. **What will be the best outcome and the probability of that occurrence?**

IV. **Will the project be accepted?**

(Note: 8% discount factor 1 year 0.9259; 2 year 0.8573)

(b) **A limited company operates a lodging house with a restaurant, shops and recreational facilities attached. Its manager has entrusted you with the planning of the coming year's operatins, more particularly on the level of profits the company was likely to earn. The lodging house has 100 double-bed rooms, which are likely to be rented at ` 150 per day. The manager expects an occupancy ratio of 70% for a period of 250 days during the tourist season. It is also anticipated that both the beds in a room will be occupied during the period. Each person staying in the lodging house is expected to spend, on the basis of past statistics, ` 30 per day in the shops attached to the lodge and ` 60 per day in the restaurant. The recreational facilities are not charged to the customer.**

Some other relevant data available to you is as under:

I. **Variable cost to volume ratio:**

	Shops	Restaurant
Cost of goods sold	40%	30%
Supplies	5%	15%
Others	5%	10%

II. For the lodging house, the variable costs are ` 25 per day per occupied room for cleaning, laundry etc.

III. Annual fixed costs for the entire complex are ` 19,50,000.

From the above, you are required to prepare:

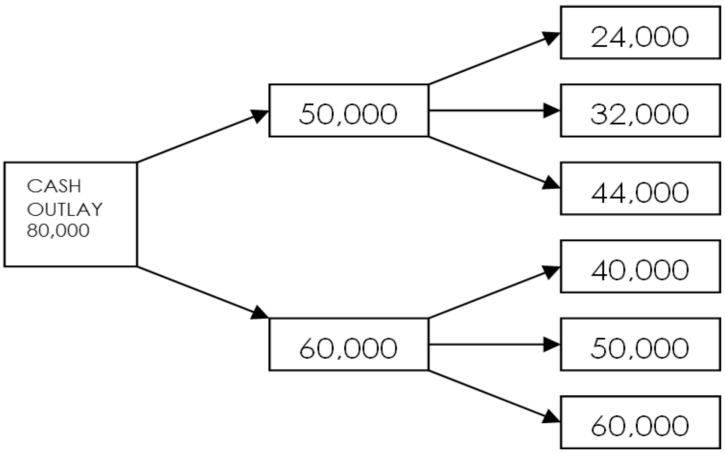
A. an income statement for the coming year; and

B. An analysis to indicate whether the manager's suggestion of reducing the room rent to ` 120 per day to enhance the occupancy ratio to 80% should be accepted.

[10+10]

Answer: 9 (a)

i) The decision tree diagram is presented in the chart, identifying various paths and outcomes, and the computation of various paths/outcomes and NPV of each path are presented in the following tables:



Path No.	Joint probability Year 1 x year 2
1	.08
2	0.12
3	0.20
4	0.24
5	0.30
6	0.06
	1.00

The Net Present Value (NPV) of each path at 8% discount rate is given below:

Path	Year 1 Cash Flows (`)	Year 2 Cash Flows (`)	Total Cash Inflows (PV)	Cash Inflows (`)	NPV (`)

			(`)		
1	50,000×0.9259= 46,295	24,000×0.8573= 20,575	66,870	80,000	(—) 13,130
2	46,295	32,000×0.8573= 27,434	73,729	80,000	(—) 6,271
3	46,295	44,000×0.8573= 37,721	84,016	80,000	4,016
4	60,000×0.9259= 55,554	40,000×0.8573= 34,292	89,846	80,000	9,846
5	55,554	50,000×0.8573= 42,865	98,419	80,000	18,419
6	55,554	60,000×0.8573= 51,438	1,06,992	80,000	26,992

Statement showing Expected Net Present Value `

z	NPV(`)	Joint Probability	Expected NPV
1	(—) 13,130	0.08	—1,050.40
2	(—) 6,271	0.12	—752.52
3	4,016	0.20	803.20
4	9,846	0.24	[redacted]
5	18,419	0.30	5,525.70
6	26,992	0.06	1,619.52
			8,508.54

Conclusions:

i. If the worst outcome is realized the project will yield NPV of – ` 13,130. The probability of occurrence of this NPV is 8% and a loss of ` 1,050.40 (path 1).

ii. The best outcome will be path 5 when the NPV is at ` 18,419. The probability of occurrence of this NPV is 30% and a expected profit of ` 5,525.70.

iii. The project should be accepted because the expected NPV is positive at ` 8,508.54 based on joint probability.

Answer: 9 (b)

A. Expected Income Statement of A Ltd. Company

(i) Revenue:		`
Hotel Room receipts (100 rooms x 250 days x x 150 x 70%)		26,25,000
Shops (100 rooms x 2 persons x 250 days x ` 30 x 70%)		10,50,000
Restaurant (100 rooms x 2 persons x 250 days x ` 60 x 70%)		21,00,000
		57,75,000
(ii) Variable costs:	`	`
Hotel Room (100 rooms x 250 days x ` 25 x 70%)	4,37,500	

Shops (` 10,50,000 x 50%)	5,25,000	
Restaurant (` 21,00,000 x 55%)	11,55,000	16,80,000
(ii) Contribution (A – B)		40,95,000
Less: Fixed costs		19,50,000
Expected profits		21,45,000

B. Income Statement based on Manger's suggestions

(i) Revenue:		`
Hotel Room receipts (100 rooms x 250 days x ` 120 x 80%)		24,00,000
Shops (100 rooms x 2 persons x 250 days x ` 30 x 80%)		12,00,000
Restaurant (100 rooms x 2 persons x 250 days x ` 60 ` 80%)		24,00,000
		60,00,000
(ii) Variable costs:	`	`
Hotel Room (100 rooms x 250 days x ` 25 x 80%)	5	
Shops (` 12,00,000 x 50%)	6,00,,000	
Restaurant (` 24,00,000 x 55%)	13,20,000	24,20,000
(iii) Contribution (A – B)		35,80,000
Less: Fixed costs		19,50,000
Profits		**16,30,000**

The profit based on manager's suggestion `16,30,000 is lower than the expected profit `21,45,000, therefore, it is advisable that the manager's suggestion of reducing the room rent to `125 per day to enhance the occupancy ratio to 80% should not be accepted.

10.

(a) **Write down the steps in financial planning process? Define cross border leasing. Mention the objectives of cross border leasing.**

(b) **The R & G Co. has following capital structure at 31st March 2013, which is considered to be optimum -**

Particulars	**Amount in `**
13% Debentures	**3,60,000**
11% Preference share Capital	**1,20,000**
Equity Share Capital (2,00,000 Shares)	**19,20,000**

The Company's Share has a current Market Price of `27.75 per Share. The expected

Dividend per Share in the next year is 50 percent of the 2008 EPS. The EPS of last 10 years is as follows. The past trends are expected to continue -

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EPS(`)	1.00	1.120	1.254	1.405	1.574	1.762	1.974	2.211	2.476	2.773

The company can Issue 14 percent New Debenture. The Company's Debenture is currently selling at `98. The New Preference Issue can be sold at a net price of `9.80, paying a dividend of `1.20 per share. The Company's marginal tax rate is 50%.

I. **Calculate the After Tax Cost (i) of new Debt and new Preference Share Capital, (ii) of ordinary Equity, assuming new Equity comes from Retained Earnings.**

II. **Calculate the Marginal Cost of Capital.**

III. **How much can be spent for Capital Investment before new ordinary share must be sold? Assuming that retained earnings available for next year's Investment are 50% of 2004 earnings.**

IV. **What will be Marginal Cost of Capital(cost of fund raised in excess of the amount calculated in part (3) if the Company can sell new ordinary shares to net `20 per share? The cost of Debt and of Preference Capital is constant. [10+10]**

Answer: 10 (a)

The financial planning process involves the following steps:

(i) Clearly defined Mission and Goal — At the outset, the top management should realize and recognize the importance of setting the organizational mission, goal and objectives, which should be clearly defined and communicated.

(ii) Determination of Financial Objectives — In developing the financial objectives, a firm must consider its purpose, mission, goal and overall objectives of the firm. The financial objectives can again be transformed into strategic planning. The financial objectives can be classified into: (a) long-term objectives, and (b) short-term objective. The long-term financial objectives may relate to earnings in excess over the targeted return on capital employed, increase in EPS and market value of share, increase in market share of its product, achieve targeted growth rate in sales, maximization of value for shareholders *etc*. The short-term financial objectives relate to profitability, liquidity, working capital management, current ratio, operational efficiency etc.

(iii) Formulation of Financial Policies — The next step in financial planning and decision making process is to formulate the financial policies which provide guides to decision making for attainment of both long-term and short-term financial objectives. For example, the company can frame its financial policies like:

a. Debt-equity ratio and current ratio of the firm may be fixed at 3:2 and 2:1 respectively.

b. A minimum cash balance has to be maintained at `1,00,000 always.

c. The minimum and maximum levels are to be fixed for all items of raw material and consumable.

d. The equity to be raised only by issue of equity shares.

e. Profitability centre concept to be implemented for all divisions in the organization.

f. The inter-divisional transfers to be priced at pre-determined transfer prices etc.

(iv) Designing Financial Procedures — The financial procedures help the Finance manager in day to day functioning, by following the pre-determined procedures. The financial decisions are implemented to achieve the organizational goals and financial objectives. The financial procedures outline the cash flow control system, setting up of standards of performance, continuous evaluation process, capital budgeting procedures, capital expenditure authorization procedures, financial forecasting techniques to be used, preparation standard set of ratios, using of budgetary control system etc.

(v) Search for Opportunities — This involves a continuous search for opportunities which are compatible with the firm's objectives. The earlier opportunity is identified the greater should be the potential returns before competitors and imitators react.

(vi) Identifying Possible Course of Action — This requires the development of business strategies from which individual decisions emanate. The available courses of action should be identified keeping in view the marketing, financial and legal restrictions or other forces not within the control of decision maker. For example, the additional funds requirement for expansion of the plant can be met by raising of finances from various sources.

(vii) Screening of Alternatives — Each course of action is sub[redacted] screening process in order to assess its feasibility considering t[redacted] expected returns and risks involved. Readily available information must be used to ascertain whether the course of action is compatible with existing business and corporate objectives and likely returns can compensate for the risks involved.

(viii) Assembling of Information — The Finance manager must be able to recognize the information needs and sources of information relevant to the decision. The cost-benefit trade-off must be kept in view in information gathering. To obtain more reliable information, the costs may be heavy in data gathering. The relevant and reliable information ensures the correct decision making and confidence in the decision outcome.

(ix) Evaluation of Alternatives and Reaching a Decision — This step will involve the evaluation of different alternatives and their possible outcomes. This involves comparing the options by using the relevant data in such a way as to identify the best possible course of action that can enable in achieving the corporate objectives in the light of prevailing circumstances.

(x) Implementation, Monitoring and Control — After the course of decision is selected, attempts to be made to implement the decision to achieve the desired results. The progress of action should be continuously monitored by comparing the actual results with the desired results. The progress should be monitored with feedback reports, control reports, post audits, performance audits, progress reports etc. Any deviations from planned course of action should be rectified by making supplementary decisions.

Cross Border Leasing

Cross-border leasing is a leasing arrangement where lessor and lessee are situated in different countries. Cross-border leasing can be considered as an alternative to

equipment loans to foreign buyers, the only difference being the documentation, with down payments, payment streams, and lease-end options the same as offered under Equipment Loans. Operating leases may be feasible for exports of large equipment with a long economic life relative to the lease term.

Objectives of Cross Border Leasing:

i) Overall Cost of Financing: A major objective of cross-border leases is to reduce the overall cost of financing through utilization by the lessor of tax depreciation allowances to reduce its taxable income. The tax savings are passed through to the lessee as a lower cost of finance. The basic prerequisites are relatively high tax rates in the lessor's country, liberal depreciation rules and either very flexible or very formalistic rules governing tax ownership.

ii) Security: The lessor is often able to utilize non-recourse debt to finance a substantial portion of the equipment cost. The debt is secured by among other things, a mortgage on the equipment and by an assignment of the right to receive payments under the lease.

iii) Accounting Treatment: Also, depending on the structure, in some countries the lessor can utilize very favourable "Leveraged Lease" Financial Accounting treatment for the overall transaction.

iv) Repossession: In some countries, it is easier for a lessor to repossess the leased equipment following a Lessee default because the lessor is an owner and not a mere secured lender.

Answer: 10 (b)

Computation of Cost of Additional Capital (component wise)

1. (a) After Tax Cost of New Debt	$\frac{\text{Interest} \times \text{Tax Rate}}{\text{Net Proceeds of issue}} = \frac{14 \times 50\%}{105.54}$	6.63% (Note 1)
1. (a) After Tax Cost of New =Preference Share Capital	$\frac{\text{Preference Dividend}}{\text{Net Proceeds of issue}} = \frac{`1.20}{`9.80}$	12.24%
1. (b) After Tax Cost of Ordinary Equity	(DPS + MPS) + g = $\frac{(2.773 \times 50\%)}{27.75}$ +12%	17.00% (Note 2)

Note 1: Since Current 13% Debenture is selling at ` 98 (`100 presumed as Par Value), the Company can sell 14% New Debentures at (14%× 98) ÷ 13% = `105.54 approximately. Alternatively, $K_d$ can also be computed as (`14 × 50%) ÷ ` 98 = 7.14%.

Note 2: For computing "g" i.e. Growth Rate under Realised Yield Method, the past average Growth Rate is at 12%, in the following manner-

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
** EPS (`)	1.00	1.120	1.254	1.405	1.574	1.762	1.974	2.211	2.476	2.773
Additional	—	0.120	0.134	0.151	0.169	0.188	0.212	0.237	0.265	0.297
Increase (%)	—	12.00	11.96	12.04	12.03	11.94	12.03	12.01	11.99	12.00

Note: % Increase in EPS = Additional EPS ÷ Previous Year EPS e.g. 0.120 ÷ 1.00 etc.

Marginal Cost of Capital: Since the present Capital Structure is optimum (Refer 1st sentence in the), the additional funds will be raised in the same ratio in order to maintain the capital structure. Hence, Marginal Cost of Capital is 15.20%, computed as under:

Component	Amount	%	Individual	WACC
Debt	3,60,000	15%	K_d = 6.63%	0.99%
Preference Capital	1,20,000	5%	K_p = 12.24%	0.61%
Equity Capital	19,20,000	80%	K_e = 17.00%	13.60%
Total	24,00,000	100%	WACC = K_0	15.20%

Note: When K_d is taken at 7.14%, K_o will be 15.28%.

Retained Earnings available for further investments = 50% of 2008 EPS
= 50%× ` 2.773×2, 00,000 Shares
= `2, 77,300

Hence, amount to be spent before selling new ordinary shares = `2, 77,300

Since Equity is 80% of the total funds employed, the total capital before issuing fresh equity shares = ` 2, 77,300 ÷ 80% = ` 3, 46,625.

Computation of Revised Marginal Cost of Capital if Equity Issue is made at ` 20 per share

Revised Cost of Ordinary Equity = (DPS ÷ MPS) +g = $\frac{(2.773 \times 50\%)}{27.75} + 12\%$ =18.30%

If MPS (i.e. Issue Price) = ` 20

Component	Amount	%	Individual	WACC
Debt	3,60,000	15%	K_d = 6.63%	0.99%
Preference Capital	1,20,000	5%	K_p = 12.24%	0.61%
Equity Capital	19,20,000	80%	K_e = 18.93%	15.15%
Total	24,00,000	100%	WACC = K_0	16.75%

Note: When K_d is taken at 7.14%, SRevised K_o will be 16.82%.