



SUGGESTED SOLUTION

FINAL MAY 2019 EXAM

SUBJECT- SFM

Test Code – FNJ 7140

BRANCH - () (Date :)

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Answer 1:
(A)

If foreign exchange risk is hedged

				Total (Rs.)
Sum due	Yen78,00,000	US\$1,02,300	Euro 95,920	
Unit input price	Yen 650	US\$10.23	Euro 11.99	
Unit sold	12000	10000	8000	
Variable cost per unit	Rs.225/-	395	510	
Variable cost	Rs.27,00,000	Rs.39,50,000	Rs. 40,80,000	Rs. 1,07,30,000
Three months forward rate for selling	2.427	0.0216	0.0178	
Rupee value of receipts	Rs.32,13,844	Rs.47,36,111	Rs. 53,88,764	Rs. 1,33,38,719
Contribution	Rs.5,13,844	Rs. 7,86,111	Rs. 13,08,764	Rs. 26,08,719
Average contribution to sale ratio				19.56%
If risk is not hedged				
Rupee value of receipt	Rs.31,72,021	Rs.47,44,898	Rs. 53,58,659	Rs. 1,32,75,578
Total contribution				Rs. 25,45,578
Average contribution to sale ratio				19.17%

(7 marks)

AKC Ltd. Is advised to hedge its foreign currency exchange risk.

(1 mark)

(B)

Cost of capital by applying Free Cash Flow to Firm (FCFF) Model is as follows:-

$$\text{Value of Firm} = V_0 = \frac{\text{FCFF}_1}{K_c - g_n}$$

Where –

FCFF₁ = Expected FCFF in the year 1

K_c = Cost of capital

g_n = Growth rate forever

Thus, Rs. 1800 lakhs = Rs. 54 lakhs / ($K_c - g$)

Since $g = 9\%$, then $K_c = 12\%$

Now, let X be the weight of debt and given cost of equity = 20% and cost of debt = 10%, then 20%

$$(1 - X) + 10\% X = 12\%$$

Hence, $X = 0.80$, so book value weight for debt was 80%

∴ Correct weight should be 60 of equity and 72 of debt.

∴ Cost of capital = $K_c = 20\% (60/132) + 10\% (72/132) = 14.5455\%$ and correct firm's value

= Rs. 54 lakhs / (0.1454 - 0.09) = Rs. 974.73 lakhs.

(8 marks)

(C)

Zero Date of a Project means a date is fixed from which implementation of the project begins. It is a starting point of incurring cost. The project completion period is counted from the zero date. Pre-project activities should be completed before zero date. The pre-project activities should be completed before zero date. The pre-project activities are:

- a. Identification of project/product
- b. Determination of plant capacity
- c. Selection of technical help/collaboration
- d. Selection of site.
- e. Selection of survey of soil/plot etc.
- f. Manpower planning and recruiting key personnel
- g. Cost and finance scheduling.

(4 marks)

Answer 2:

(A)

(i) Current price of the Bond = $100 \times [1 - \{45/360\} \times 0.06] = \text{` } 99.25$

Alternatively, the current price of bond may also be calculated as follows:

$$\frac{D}{100-D} \times \frac{360}{45} = 0.06$$

$$\frac{D}{100-D} = 0.06 \times \frac{45}{360}$$

$$\frac{D}{100-D} = 0.06 \times \frac{1}{8}$$

$$8D = 6 - 0.06D$$

$$8.06D = 6$$

$$D = \frac{6}{8.06} = 0.7444$$

Current price of the bond = Face value - D

$$= \text{` } 100 - 0.7444 = \text{` } 99.2556$$

(ii) Bond equivalent yield = $\frac{100 - 99.25}{99.25} \times \frac{360}{45} = 6.045\% \text{ P.A.}$

(iii) Effective annual return = $\left[1 + (0.06045 / 8)\right]^8 - 1 = 6.207\% \text{ P.A.}$

Note: If a year of 365 days is considered the Bond equivalent yield and Effective annual return works out to 6.296% P.A. (4 marks)

(B)

Duration of Bond X

Year	Cash flow	P.V. @ 10%		Proportion of bond value	Proportion of bond value x time (years)
1	1070	.909	972.63	1.000	1.00 0

Duration of the Bond is 1 year

(2 marks)

Duration of Bond Y

Year	Cash flow	P.V. @ 10%		Proportion of bond value	Proportion of bond value x time (years)
1	80	.909	72.72	0.077	0.077
2	80	.826	66.08	0.071	0.142
3	80	.751	60.08	0.064	0.192
4	1080	.683	<u>737.64</u>	<u>0.788</u>	<u>3.152</u>
			<u>936.52</u>	<u>1.000</u>	<u>3.563</u>

Duration of the Bond is 3.563 years

(2 marks)

Let x_1 be the investment in Bond X and therefore investment in Bond Y shall be $(1 - x_1)$. Since the required duration is 2 year the proportion of investment in each of these two securities shall be computed as follows:

$$2 = x_1 + (1 - x_1) 3.563$$

$$x_1 = 0.61$$

Accordingly, the proportion of investment shall be 61% in Bond X and 39% in Bond Y respectively.

Amount of investment

Bond X	Bond Y
PV of Rs. 1,00,000 for 2 years @ 10% x 61%	PV of Rs. 1,00,000 for 2 years @ 10% x 39%
= Rs. 1,00,000 (0.826) x 61%	= Rs. 1,00,000 (0.826) x 39%
= Rs. 50,386	= Rs. 32,214
No. of Bonds to be purchased	No. of Bonds to be purchased
= Rs. 50,386/Rs. 972.73 = 51.79 i.e. approx.	= Rs. 32,214/Rs. 936.52 = 34.40 i.e. approx.
52 bonds	34 bonds

(3 marks)

Note: The investor has to keep the money invested for two years. Therefore, the investor can invest in both the bonds with the assumption that Bond X will be reinvested for another one year on same returns.

(1 mark)

(C)

Strategy 1: This strategy is covered by High Risk: Low Reward category and worst as it leaves all exposures unhedged. Although this strategy does not involve any time and effort, it carries high risk.

Strategy 2: This strategy covers Low Risk: Reasonable reward category as the exposure is covered wherever there is anticipated profit otherwise it is left.

Strategy 3: This strategy is covered by High Risk: High Reward category as to earn profit, cancellations and extensions are carried out. Although this strategy leads to high gains but it is also accompanied by high risk.

Strategy 4: This strategy is covered by Low Risk : Low Reward category as company plays a very safe game.

Diagrammatically all these strategies can be depicted as follows:



(1 mark x 4 = 4 marks)

Answer 3:

(A)

Financial Analysis whether to set up the manufacturing units in India or not may be carried using NPV technique as follows:

I. Incremental Cash Outflows

	\$ Million
Cost of Plant and Machinery	500.00
Working Capital	50.00
Release of existing Working Capital	(15.00)
	535.00

(2 marks)

II. Incremental Cash Inflow after Tax (CFAT)

(a) Generated by investment in India for 5 years

	\$ Million
Sales Revenue (5 Million x \$80)	400.00
Less: Costs	
Variable Cost (5 Million x \$20)	100.00
Fixed Cost	30.00
Depreciation (\$500Million/5)	100.00
EBIT	170.00

Taxes@35%	59.50
EAT	110.50
Add: Depreciation	100.00
CFAT (1-5 years)	210.50
Cash flow at the end of the 5 years (Release of Working Capital)	35.00

(5 marks)

(b) Cash generation by exports

	\$ Million
Sales Revenue (1.5 Million x \$80)	120.00
Less: Variable Cost (1.5 Million x \$40)	60.00
Contribution before tax	60.00
Tax@35%	21.00
CFAT (1-5 years)	39.00

(2 marks)

(c) Additional CFAT attributable to Foreign Investment

	\$ Million
Through setting up subsidiary in India	210.50
Through Exports in India	39.00
CFAT (1-5 years)	171.50

(1 mark)

III. Determination of NPV

Year	CFAT (\$ Million)	PVF@12%	PV(\$ Million)
1-5	171.50	3.6048	618.2232
5	35	0.5674	19.8590
			638.0822
Less: Initial Outflow			535.0000
			103.0822

Since NPV is positive the proposal should be accepted.

(2 marks)

(B)

(i) As per MM model, the current market price of equity share is:

$$P_0 = \frac{1}{1+k_e} \times (D_1 + P_1)$$

(a) If the dividend is declared:

$$150 = \frac{1}{1+0.10} \times (9 + P_1)$$

$$150 = \frac{9 + P_1}{1.10}$$

$$165 = 9 + P_1$$

$$P_1 = 165 - 9 = \text{`156}$$

The market price of the equity share at the end of the year would be `156.

(b) If the dividend is not declared:

$$150 = \frac{1}{1+0.10} \times (0 + P_1)$$

$$150 = \frac{P_1}{1.10}$$

$$P_1 = \text{`165}$$

The Market price of the equity share at the end of the year would be `165.

(2 marks x 2 = 4 marks)

Answer 4:

(A)

Final settlement amount shall be computed by using formula:

$$= \frac{(N)(RR-FR)(dtm/DY)}{[1+RR(dt m/DY)]}$$

(1 mark)

Where,

N = the notional principal amount of the agreement;

RR = Reference Rate for the maturity specified by the contract prevailing on the contract settlement date;

FR = Agreed-upon Forward Rate; and

dtm = maturity of the forward rate, specified in days (FRA Days)

DY = Day count basis applicable to money market transactions which could be 360 or 365 days.

Accordingly,

If actual rate of interest after 6 months happens to be 9.60%

$$= \frac{(\text{Rs.60 Crore})(0.096-0.093)(3/12)}{[1+0.096(3/12)]}$$

$$= \frac{(\text{Rs.60 Crore})(0.00075)}{1.024} = \text{Rs.4,39,453}$$

Thus, banker will pay Parker & Co. a sum of Rs. 4,39,453

(3 marks)

Actual Rate	9.60%
Interest payable	
Rs. 60 crore x 0.096 x 3/12	(Rs.1,44,00,000)
Compensation Receivable: Rs. 60 crore x (0.096 – 0.093) x 3/12	Rs. 4,50,000
Interest Cost to Company (In Rs.)	Rs. 1,39,50,000
Annual Interest Cost to Company (In %)(Rs. 1,39,50,000/ Rs. 60crore) x 12/3	9.30%

(4 marks)

(B)

(i) Statement showing computation of expected net present value of Projects A and B:

Project A			Project B		
NPV Estimate (Rs.)	Probability	Expected Value	NPV Estimate	Probability	Expected Value
15,000	0.2	3,000	15,000	0.1	1,500
12,000	0.3	3,600	12,000	0.4	4,800
6,000	0.3	1,800	6,000	0.4	2,400
3,000	0.2	600	3,000	0.1	300
	1.0	EV = 9,000		1.0	EV = 9,000

(2 marks)

(ii) Computation of Standard deviation of each project

Project A

P	X	(X – EV)	P (X-EV) ²
0.2	15,000	6,000	72,00,000
0.3	12,000	3,000	27,00,000
0.3	6,000	- 3,000	27,00,000
0.2	3,000	- 6,000	72,00,000
			Variance = 1,98,00,000

Standard Deviation of Project A = $\sqrt{19800000}$ = Rs.4450

(1.5 marks)

Project B

P	X	(X – EV)	P (X-EV) ²
0.1	15,000	6,000	36,00,000
0.4	12,000	3,000	36,00,000
0.4	6,000	- 3,000	36,00,000
0.1	3,000	- 6,000	36,00,000
			Variance = 1,44,00,000

Standard Deviation of Project B = $\sqrt{14400000}$ = Rs.3795

(1.5 marks)

(iii) Computation of profitability of each project

Profitability index = Discount cash inflow / Initial outlay

In case of Project A : PI = $\frac{9,000 + 36,000}{36000}$ = 45000 / 36000 = Rs. 1.25

In case of Project B : PI = $\frac{9,000 + 30,000}{30000}$ = 39000 / 30000 = Rs. 1.30

(1.5 marks)

- (iv) Measurement of risk is made by the possible variation of outcomes around the expected value and the decision will be taken in view of the variation in the expected value where two projects have the same expected value, the decision will be the project which has smaller variation in expected value. In the selection of one of the two projects A and B, Project B is preferable because the possible profit which may occur is subject to less variation (or dispersion). Much higher risk is lying with project A. (1.5 marks)

Answer 5:

(A)

Bank will buy from customer at the agreed rate of Rs. 65.40. In addition to the same if bank will charge/ pay swap difference and interest on outlay funds.

(i) Swap Difference

Bank Sells at Spot Rate on 30 November 2015 Rs. 65.22

Bank Buys at Forward Rate of 31 December 2015 (65.27 + 0.15) Rs. 65.42

Swap Loss per US\$ Rs. 00.20

Swap loss for US\$ 1,00,000 Rs. 20,000

(2 marks)

(ii) Interest on Outlay Funds

On 30th November Bank sells at Rs. 65.22

It buys from customer at Rs. 65.40

Outlay of Funds per US\$ Rs. 00.18

Interest on Outlay fund for US\$ 1,00,000 for 31 days

Rs. 275.00 (US\$100000 x 00.18 x 31/365 x 18%) **(2 marks)**

(iii) Charges for early delivery

Swap loss Rs. 20,000.00

Interest on Outlay fund for US\$ 1,00,000 for 31 days Rs. 275.00

Rs. 20,275.00

(2 marks)

(iv) Net Inflow to Mr. X

Amount received on sale (Rs. 65.40 x 1,00,000) Rs. 65,40,000

Less: Charges for early delivery payable to bank (Rs.20,275)

Rs. 65,19,725 **(2 marks)**

(B)

Calculation of Income available for Distribution

	Units (Lakh)	Per Unit (Rs.)	Total (Rs. In lakh)
Income from April	300	0.0765	22.9500
<i>Add:</i> Dividend equalization collected on issue	6	0.0765	0.4590
	306	0.0765	23.4090
<i>Add:</i> Income from May		0.1125	34.4250
	306	0.1890	57.8340
<i>Less:</i> Dividend equalization paid on repurchase	3	0.1890	(0.5670)
<i>Add:</i> Income from June	303	0.1890	57.2670
		0.1500	45.4500
	303	0.3390	102.7170
<i>Less:</i> Dividend Paid		0.2373	(71.9019)
	303	0.1017	30.8151

(3 marks)

Calculation of Issue Price at the end of April

	Rs.
Opening NAV	18.750
<i>Add:</i> Entry Load 2% of Rs. 18.750	(0.375)
	19.125
<i>Add:</i> Dividend Equalization paid on Issue Price	0.0765
	19.2015

(1 mark)

Calculation of Repurchase Price at the end of May

	Rs.
Opening NAV	18.750
<i>Less:</i> Exit Load 2% of Rs. 18.750	(0.375)
	18.375
<i>Add:</i> Dividend Equalization paid on Issue Price	0.1890
	18.564

(1 mark)

Closing NAV

		Rs. (Lakh)
Opening Net Asset Value (Rs. 18.75 × 300)		5625.0000
Portfolio Value Appreciation		425.4700
Issue of Fresh Units (6 × 19.2015)		115.2090
Income Received (22.950 + 34.425 + 45.450)		102.8250
		6268.504
<i>Less:</i> Units repurchased (3 × 18.564)	-55.692	

Income Distributed	-71.9019	(-127.5939)
Closing Net Asset Value		6140.9101
Closing Units (300 + 6 – 3) lakh		303 lakh
Closing NAV as on 30 th June		Rs. 20.2670

(3 marks)

Answer 6:

(A)

(i) The number of shares to be issued by Tatu Ltd.:

The Exchange ratio is 0.5

So, new Shares = 2,40,000 x 0.5 = 1,20,000 shares.

(2 marks)

(ii) EPS of Tatu Ltd. after acquisition:

Total Earnings (Rs. 24,00,000 + Rs.4,80,000)

Rs.28,80,000

No. of Shares (8,00,000 + 1,20,000)

9,20,000

EPS (Rs. 28,80,000)/ 9,20,000)

Rs.3.13

(2 marks)

(iii) Equivalent EPS of Mantu Ltd.:

No. of new Shares

0.5

EPS

Rs.3.13

Equivalent EPS (Rs. 3.13 x 0.5)

Rs.1.57

(2 marks)

(v) Market Value of merged firm:

Total number of Shares

9,20,000

Expected Market Price

Rs.31.30

Total value (9,20,000 x 31.30)

Rs.2,87,96,000

(2 marks)

(B)

Workings:

1) Calculation of annual installment

Rs. 20 lakh/ 4.038 = Rs. 4.95 lakh

$3.038^* + 1 = 4.038$

* PVIAF @ 12% for 4 years

(1 mark)

2) Calculation of Present Value (PV) of tax shield or tax benefit on interest on debt :-

Yr.	Installment (Rs. lakh)	Opening value (Rs. lakh)	Principal payment (Rs. lakh)	Interest 12% (Rs. lakh)	Tax shield (Rs. lakh)	PVF (12%)	PV (Rs. lakh)
0	4.95	20.00	4.95	-	-	-	-
1	4.95	15.05	3.15	1.80	0.54	0.893	0.482
2	4.95	11.90	3.52	1.43	0.43	0.797	0.343
3	4.95	8.38	3.95	1.00	0.30	0.712	0.214
4	4.95	4.43	4.43	0.52	0.16	0.635	0.102
							1.141

(2 marks)

3) Calculation of Present Value (PV) of tax shield or tax benefit on depreciation: -

Year	Opening value (Rs. lakh)	Depreciation Tax allowance (Rs. lakh)	Tax Saving @ 30% (Rs. lakh)	PVF (12%)	PV (Rs. lakh)
1	20	4.00	1.20	0.893	1.072
2	16	3.20	0.96	0.797	0.765
3	12.80	2.56	0.77	0.712	0.548
4	10.24	2.05	0.62	0.635	0.394
5	8.19	1.64	0.49	0.567	0.278
					3.057

(2 marks)

4) Calculation of Present Value (PV) of leased decision: -

Particulars	Years	Amount (Rs. lakh)	PVF @ 12%	PV (Rs. lakh)
Lease Rent	0-4	5.2	4.037	(-) 20.99
Tax relief on lease	1-5	1.56	3.604	5.62
				(-) 15.37

(1 mark)

5) Calculation of Present Value (PV) of buying decision: -

	(Rs. lakh)
Purchase price	- 20.00
Present Value of Tax saving on Interest	1.141
Present Value of tax saving on Depreciation	3.057
Salvage (Rs. 2 lakh x 0.567)	1.134
Present Value of buying decision	(-) 14.668

(a) Calculation of Net Advantage of Leasing (NAL):

Particulars	(Rs. lakh)
Present Value of lease decision	- 15.37
Less: Present Value of buying decision Net	- 14.668
Advantage of Leasing	- 0.702

Recommendation: Since Net Advantage of Leasing is negative the lease is financially not viable. **(1 mark)**

(b) Computation of Break Even Lease Rental (BELR) Benefits from leasing :-

Let us assume the lease rental be L

Cost of the generator	Rs. 20 lakh
PV of Tax shield on rentals	$3.604 \times 0.3 \times L = 1.0812 L$ Cost of leasing: -
Present Value of lease rentals	4.037 L
Present Value of Tax shield on interest on debt	1.141
Present Value of Tax shield on depreciation	3.057
Present Value of salvage	<u>1.134</u>
	<u>4.037L + 5.332</u>

Benefits from leasing = Cost of leasing

$$20 + 1.0812L = 4.037L + 5.332 \text{ Thus, } L =$$

$$14.668 / 2.9565 = \text{Rs. } 4.961 \text{ lakh (BELR)}$$

(5 marks)

Alternative Solution

Students may also discount cash flows under both alternatives at after tax cost of debt i.e. $12\%(1-0.3)=8.4\%$. In such situation the alternative solution will be as follows:

Workings:

- 1) Calculation of annual installment

$$\text{Rs. } 20 \text{ lakh} / 4.038 = \text{Rs. } 4.95 \text{ lakh}$$

$$3.038 * + 1 = 4.038$$

* PVIAF @ 12% for 4 years

(1 mark)

- 2) Calculation of Present Value (PV) of tax shield or tax benefit on interest on debt :-

(2 marks)

Yr.	Installment (Rs. lakh)	Opening value (Rs. lakh)	Principal payment (Rs. lakh)	Interest 12% (Rs. lakh)	Tax shield (Rs. lakh)	PVF (8.4%)	PV 10% (Rs. lakh)
0	4.95	20.00	4.95	-	-	-	-

1	4.95	15.05	3.15	1.80	0.54	0.922	0.498
2	4.95	11.90	3.52	1.43	0.43	0.851	0.366
3	4.95	8.38	3.95	1.00	0.30	0.785	0.236
4	4.95	4.43	4.43	0.52	0.16	0.724	0.116
							1.216

3) Calculation of Present Value (PV) of tax shield or tax benefit on depreciation: -

(2 marks)

Year	Opening value (Rs. lakh)	Depreciation Tax allowance (Rs. lakh)	Tax Saving @ 30% (Rs. lakh)	PVF (8.4%)	PV (Rs. lakh)
1	20	4.00	1.20	0.922	1.106
2	16	3.20	0.96	0.851	0.817
3	12.80	2.56	0.77	0.785	0.604
4	10.24	2.05	0.62	0.724	0.449
5	8.19	1.64	0.49	0.668	0.327
					3.303

4) Calculation of Present Value (PV) of lease decision : -

Particulars	Years	Amount (Rs. lakh)	PVF @ 8.4%	PV (Rs. lakh)
Lease Rent	0-4	5.2	4.283	(-) 22.27
Tax relief on lease	1-5	1.56	3.95	6.16
				(-) 16.11

(0.5 marks)

5) Calculation of Present Value (PV) of buying decision : -

(1.5 mark)

	(Rs. lakh)
Purchase price	- 20.00
Present Value of Tax saving on Interest	1.216
Present Value of tax benefit on depreciation	3.303
Salvage (Rs. 2 lakh x 0.668)	1.336
Present Value of buying decision	(-) 14.145

(a) Calculation of Net Advantage of Leasing (NAL):

Particulars	(Rs. lakh)
Present Value of lease decision	- 16.110
Less: Present Value of buying decision Net	- 14.145
Advantage of Leasing	- 1.965

Recommendation: Since Net Advantage of Leasing is negative the lease is financially not viable. (1 mark)

(b) Computation of Break Even Lease Rental (BELR) Benefits from leasing

:-

Let us assume the lease rental be L

Cost of the generator Rs. 20 lakh
PV of Tax shield on rentals $3.95 \times 0.3 \times L = 1.185 L$

Cost of leasing: -

Present Value of lease rentals 4.283L
Present Value of Tax shield on interest on debt 1.216
Present Value of Tax shield on depreciation 3.303
Present Value of salvage 1.336
4.283L + 5.855

Benefits from leasing = Cost of leasing $20 + 1.185 L =$
 $4.283 L + 5.855$

Thus, $L = 14.145 / 3.098 = \text{Rs. } 4.566 \text{ lakh (BELR)}$

(5 marks)

Answer 7:

(A)

The following are, briefly, a summary of investment banking functions:

- **Underwriting:** The underwriting function within corporate finance involves shepherding the process of raising capital for a company. In the investment banking world, capital can be raised by selling either stocks or bonds to the investors.
- **Managing an IPO (Initial Public Offering):** This includes hiring managers to the issue, due diligence and marketing the issue.
- **Issue of debt:** When a company requires capital, it sometimes chooses to issue public debt instead of equity.
- **Follow-on hiring of stock:** A company that is already publicly traded will sometimes sell stock to the public again. This type of offering is called a follow-on offering, or a secondary offering.
- **Mergers and Acquisitions:** Acting as intermediary between Acquirer and target company
- **Sales and Trading:** This includes calling high networth individuals and institutions to suggest trading ideas (on a caveat emptor basis), taking orders and facilitating the buying and selling of stock, bonds or other securities such as currencies.
- **Research Analysis:** Research analysts study stocks and bonds and make recommendations on whether to buy, sell, or hold those securities.
- **Private Placement:** A private placement differs little from a public offering aside from the fact

that a private placement involves a firm selling stock or equity to private investors rather than to public investors.

- **Financial Restructuring:** When a company cannot pay its cash obligations - it goes bankrupt. In this situation, a company can, of course, choose to simply shut down operations and walk away or, it can also restructure and remain in business. **(4 marks)**

(B)

- (i) SWAP ratio based on current market prices:

EPS before acquisition:

Mani Ltd. : Rs.2,000 lakhs / 200 lakhs: Rs.10

Ratnam Ltd.: Rs.4,000 lakhs / 1,000 lakhs: Rs. 4

Market price before acquisition:

Mani Ltd.: Rs.10 × 10 Rs.100

Ratnam Ltd.: Rs.4 × 5 Rs. 20

SWAP ratio: 20/100 or 1/5 i.e. 0.20

(2 marks)

- (ii) Market Price after acquisition:

EPS after acquisition : Rs.15.00 P/E

ratio after acquisition 10 × 0.9 9

Market price of share (Rs. 15 X 9) Rs.135.00

(2 marks)

(C)

- (i) Market Risk Premium (A) = 14% – 7% = 7%

Share	Beta	Risk Premium (Beta x A) %	Risk Free Return %	Return %	Return Rs.
Oxy Rin Ltd.	0.45	3.15	7	10.15	8,120
Boxed Ltd.	0.35	2.45	7	9.45	14,175
Square Ltd.	1.15	8.05	7	15.05	33,863
Ellipse Ltd.	1.85	12.95	7	19.95	89,775
Total Return					<u>1,45,933</u>

Total Investment Rs. 9,05,000

(2 marks)

- (i) Portfolio Return = (Rs. 145933 / Rs. 905000) × 100 = 16.13%

(1 mark)

- (ii) Portfolio Beta = Portfolio Return – Risk Free Rate + Risk Premium × β = 16.13%

$$7\% + 7\beta = 16.13\%$$

$$\beta = 1.30$$

(1 mark)

(D)

(a) Calculation of Profit after tax (PAT)

		Rs.
Profit before interest and tax (PBIT)		32,00,000
Less: Debenture interest (Rs. 64,00,000 × 12/100)		7,68,000
Profit before tax (PBT)		24,32,000
Less: Tax @ 35%		8,51,200
Profit after tax (PAT)		15,80,800
Less: Preference Dividend		
(Rs. 40,00,000 × 8/100)	3,20,000	
Equity Dividend (Rs. 80,00,000 × 8/100)	6,40,000	9,60,000
Retained earnings (Undistributed profit)		6,20,800

Calculation of Interest and Fixed Dividend Coverage

$$= \frac{\text{PAT} + \text{Debenture interest}}{\text{Debenture interest} + \text{Preference dividend}}$$

$$= \frac{15,80,800 + 7,68,000}{7,68,000 + 3,20,000} = \frac{23,48,800}{10,88,000} = 2.16 \text{ times}$$

(1.5 marks)

(b) Calculation of Capital Gearing Ratio

$$\text{Capital Gearing Ratio} = \frac{\text{Fixed interest bearing funds}}{\text{Equity shareholders' Funds}}$$

$$= \frac{\text{Preference Share Capital} + \text{Debentures}}{\text{Equity Share Capital} + \text{Reserves}} = \frac{40,00,000 + 64,00,000}{80,00,000 + 32,00,000} = \frac{1,04,00,000}{1,12,00,000} = 0.93$$

(c) Calculation of Yield on Equity Shares:

Yield on equity shares is calculated at 50% of profits distributed and 5% on undistributed profits:

	(Rs.)
50% on distributed profits (Rs. 6,40,000 × 50/100)	3,20,000
5% on undistributed profits (Rs. 6,20,800 × 5/100)	<u>31,040</u>
Yield on equity shares	<u>3,51,040</u>

$$\text{Yield on equity shares \%} = \frac{\text{Yield on shares}}{\text{Equity share capital}} \times 100$$

$$= \frac{3,51,040}{80,00,000} \times 100 = 4.39\% \text{ or, } 4.388\%$$

(1.5 mark)

Calculation of Expected Yield on Equity shares

Note: There is a scope for assumptions regarding the rates (in terms of percentage for every one time of difference between Sun Ltd. and Industry Average) of risk premium involved with respect to Interest and Fixed Dividend Coverage and Capital Gearing Ratio. The below solution has been worked out by assuming the risk premium as:

(i) 1% for every one time of difference for Interest and Fixed Dividend Coverage.

(ii) 2% for every one time of difference for Capital Gearing Ratio.

(a) Interest and fixed dividend coverage of Sun Ltd. is 2.16 times but the industry average is 3 times. Therefore, risk premium is added to Sun Ltd. Shares @ 1% for every 1 time of difference.

$$\text{Risk Premium} = 3.00 - 2.16 (1\%) = 0.84 (1\%) = 0.84\%$$

(b) Capital Gearing ratio of Sun Ltd. is 0.93 but the industry average is 0.75 times. Therefore, risk premium is added to Sun Ltd. shares @ 2% for every 1 time of difference.

$$\text{Risk Premium} = (0.75 - 0.93) (2\%)$$

$$= 0.18 (2\%) = 0.36\%$$

	(%)
Normal return expected	9.60
Add: Risk premium for low interest and fixed dividend coverage	0.84
Add: Risk premium for high interest gearing ratio	<u>0.36</u>
	<u>10.80</u>

Value of Equity Share

$$= \frac{\text{Actual yeild}}{\text{Expected yield}} \times \text{paid up value of share} = \frac{4.39}{10.80} \times 100 = \text{Rs.40.65} . \quad (1 \text{ mark})$$