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SUGGESTED SOLUTION

CA FINAL

Test Code – JKN_SFM_22

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ANSWER 1(a)

(i) Market value of Companies before Merger

Particulars	**RIL**	**SIL**
EPS	Rs. 2	Re. 1
P/E Ratio	10	5
Market Price per Share	Rs. 20	Rs. 5
Equity shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(2 MARKS)

(ii) Post Merger Effects on RIL

	Rs.
Post merger earnings	30,00,000
Exchange Ratio (1 : 4)	
No. of equity shares o/s (10,00,000 + 2,50,000)	12,50,000
EPS : 30,00,000/ 12,50,000	2.4
PE Ratio	10
Market Value 10 × 2.4	24
Total Value (12,50,000 × 24)	3,00,00,000
Gains From Merger :	**Rs.**
Post – Merger Market Value of the Firm	3,00,00,000
Less : Pre – Merger Market Value	
RIL 2,00,00,000	
SIL 50,00,000	2,50,00,000
Total gains from Merger	50,00,000

(2 MARKS)

Apportionment of Gains between the Shareholders :

Particulars	**RIL(Rs.)**	**SIL (Rs.)**
Post Merger Market Value :		
10,00,000 × 24	2,40,00,000	--
2,50,000 × 24	-	60,00,000
Less : Pre – Merger Market Value	2,00,00,000	50,00,000
Gains from Merger :	40,00,000	10,00,000

Thus, the shareholders of both the companies (RIL + SIL) are better off than before

(2 MARKS)

(iii)

Post – Merger Earnings :	
Increase in Earnings by 20%	
New Earnings : Rs. 30,00,000 × (1 + 0.20)	Rs. 36,00,000
No. of equity shares outstanding	12,50,000
EPS (Rs. 36,00,000/12,50,000)	Rs. 2.88
PE Ratio	10
Market Price Per Share : = Rs. 2.88 × 10	Rs. 28.80

∴ Share holders will be better – off than before the merger situation.

(2 MARKS)

ANSWER 1(b)

Final settlement amount shall be computed by using formula:

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

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%

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

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

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

If actual rate of interest after 6 months happens to be 8.80%

$$= \frac{(Rs.60\ Crore)(0.088-0.093)(3/12)}{[1+0.088(3/12)]}$$

$$= \frac{(Rs.60\ Crore)(-0.00125)}{1.022} = -Rs.7,33,855$$

Thus Parker & Co. will pay banker a sum of Rs. 7,33,855

Actual Rate	**9.60%**	**8.80%**
Interest payable		
Rs. 60 crore x 0.096 x 3/12	(Rs.1,44,00,000)	
Rs. 60 crore x 0.088 x 3/12		(Rs.1,32,00,000)
Compensation Receivable: Rs. 60 crore x (0.096 – 0.093) x 3/12	Rs. 4,50,000	
Compensation Payable: Rs. 60 crore x (0.088 – 0.093) x 3/12		(Rs. 7,50,000)
Interest Cost to Company (In Rs.)	Rs. 1,39,50,000	Rs. 1,39,50,000
Annual Interest Cost to Company (In %)(Rs. 1,39,50,000/ Rs. 60crore) x 12/3	9.30%	9.30%

(8 MARKS)

ANSWER 1(c)

Distinction between Primary Participants and Secondary Participants in securitization

Primary Participants: Primary Participants are main parties to this process. The primary participants in the process of securitization are as follows:

(i) **Originator:** It is the initiator of deal or can be termed as securitizer. It is an entity which sells the assets lying in its books and receives the funds generated through the sale of such assets.

(ii) **Special Purpose Vehicle:** Also, called SPV is created for the purpose of executing the deal. Since issuer originator transfers all rights in assets to SPV, it holds the legal title of these assets. It is created especially for the purpose of securitization only and normally could be in form of a company, a firm, a society or a trust.

(iii) **The Investors:** Investors are the buyers of securitized papers which may be an individual, an institutional investor such as mutual funds, provident funds, insurance companies, mutual funds, Financial Institutions etc.

Secondary Participants

Besides, the primary participants, other parties involved into the securitization process are as follows:

(i) **Obligors:** Actually they are the main source of the whole securitization process. They are the parties who owe money to the firm and are assets in the Balance Sheet of Originator.

(ii) **Rating Agency:** Since the securitization is based on the pools of assets rather than the originators, the assets have to be assessed in terms of its credit quality and credit support available and that is where the credit rating agencies come.

(iii) **Receiving and Paying Agent (RPA):** Also, called Servicer or Administrator, it collects the payment due from obligor(s) and passes it to SPV. It also follow up with defaulting borrower and if required initiate appropriate legal action against them.

(iv) **Agent or Trustee:** Trustees are appointed to oversee that all parties to the deal perform in the true spirit of terms of agreement. Normally, it takes care of interest of investors who acquires the securities.

(v) **Credit Enhancer:** Since investors in securitized instruments are directly exposed to performance of the underlying and sometime may have limited or no recourse to the originator, they seek additional comfort in the form of credit enhancement. In other words, they require credit rating of issued securities which also empowers marketability of the securities.

Originator itself or a third party say a bank may provide an additional comfort called Credit Enhancer. While originator provides his comfort in the form of over collateralization or cash collateral, the third party provides it in form of letter of credit or surety bonds.

(vi) **Structurer:** It brings together the originator, investors, credit enhancers and other parties to the deal of securitization. Normally, these are investment bankers also called arranger of the deal. It ensures that deal meets all legal, regulatory, accounting and tax laws requirements.

(4 MARKS)

ANSWER 2(a)

Date	Closing Sensex	Sign of Price Charge
1.10.17	2800	
3.10.17	2780	-
4.10.17	2795	+
5.10.17	2830	+
8.10.17	2760	-
9.10.17	2790	+
10.10.17	2880	+
11.10.17	2960	+
12.10.17	2990	+
15.10.17	3200	+
16.10.17	3300	+
17.10.17	3450	+
19.10.17	3360	-
22.10.17	3290	-
23.10.17	3360	+
24.10.17	3340	-
25.10.17	3290	-
29.10.17	3240	-
30.10.17	3140	-
31.10.17	3260	+

Total of sign of price changes (r) = 8 No of

Positive changes = n1 = 11

No. of Negative changes = n2 = 8

$$\mu_r = \frac{2n_1n_2}{n_1+n_2} + 1$$

$$\mu = \frac{2\times 11\times 8}{11+8} + 1 = 176/19 + 1 = 10.26$$

$$\hat{\sigma}_r = \sqrt{\frac{2n_1n_2\,(2n_1n_2 - n_1 - n_2)}{(n_1+n_2)^2(n_1+n_2-1)}}$$

$$\hat{\sigma}_r = \sqrt{\frac{(2\times 11\times 8)\,(2\times 11\times 8 - 11 - 8)}{(11+8)^2(11+8-1)}} = \sqrt{\frac{176\times 157}{(19)^2(18)}} = \sqrt{4.252} = 2.06$$

Since too few runs in the case would indicate that the movement of prices is not random. We employ a two- tailed test the randomness of prices.

Test at 5% level of significance at 18 degrees of freedom using t - table

The lower limit

$= \mu - t \times \hat{\sigma}_t = 10.26 - 2.101 \times 2.06 = 5.932$

Upper limit

$= \mu + t \times \hat{\sigma}_t = 10.26 + 2.101 \times 2.06 = 14.588$

At 10% level of significance at 18 degrees of freedom

Lower limit

$= 10.26 - 1.734 \times 2.06 = 6.688$

Upper limit

$= 10.26 + 1.734 \times 2.06 = 13.832$

As seen r lies between these limits. Hence, the market exhibits weak form of efficiency.

*For a sample of size n, the t distribution will have n-1 degrees of freedom.

(8 MARKS)

ANSWER 2(b)

Calculation of Income available for Distribution

	Units (Lakh)	Per Unit (Rs.)	Total (Rs. In lakh)
Income from April	300	0.0765	22.9500
Add: Dividend equalization collected on issue	6	0.0765	0.4590
	306	0.0765	23.4090
Add: Income from May		0.1125	34.4250
	306	0.1890	57.8340
Less: Dividend equalization paid on repurchase	3	0.1890	(0.5670)
Add: Income from June	303	0.1890	57.2670
		0.1500	45.4500
	303	0.3390	102.7170
Less: 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
Add: Entry Load 2% of Rs. 18.750	(0.375)
	19.125
Add: 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
Less: Exit Load 2% of Rs. 18.750	(0.375)
	18.375
Add: 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
Less: 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 30th June		Rs. 20.2670

(3 MARKS)

ANSWER 2(c)

Despite being a country of many cultures and communities traditionally inclined to business and entrepreneurship, India still ranks low on comparative ratings across entrepreneurship, innovation and ease of doing business. The reasons are obvious. These include our old and outdated draconian rules and regulations which provides a hindrance to our business environment for a long time. Other reasons are red tapism, our time consuming procedures, and lack of general support for entrepreneurship. Off course, things are changing in recent times.

As per Investopedia, Angel investors invest in small startups or entrepreneurs. Often, angel investors are among an entrepreneur's family and friends. The capital angel investors provide may be a one-time investment to help the business propel or an ongoing injection of money to support and carry the company through its difficult early stages.

Angel investors provide more favorable terms compared to other lenders, since they usually invest in the entrepreneur starting the business rather than the viability of the business. Angel investors are focused on helping startups take their first steps, rather than the possible profit they may get from the business. Essentially, angel investors are the opposite of venture capitalists.

Angel investors are also called informal investors, angel funders, private investors, seed investors or business angels. These are affluent individuals who inject capital for startups in exchange for ownership equity or convertible debt. Some angel investors invest through crowdfunding platforms online or build angel investor networks to pool in capital.

Angel investors typically use their own money, unlike venture capitalists who take care of pooled money from many other investors and place them in a strategically managed fund.

Though angel investors usually represent individuals, the entity that actually provides the fund may be a limited liability company, a business, a trust or an investment fund, among many other kinds of vehicles.

Angel investors who seed startups that fail during their early stages lose their investments completely. This is why professional angel investors look for opportunities for a defined exit strategy, acquisitions or initial public offerings (IPOs).

(4 MARKS)

ANSWER 3(a)

Calculation of return on portfolio for 2009 – 10	**(Calculation in Rs./ share)**		
	M	**N**	
Dividend received during the year	10	3	
Capital gain /loss by 31.03.10			
Market value by 31.03.10	220	290	
Cost of investment	200	300	
Gain/loss	20	(-) 10	
Yield	30	(-) 7	
Cost	200	300	
% return	15%	(-) 2.33%	
Weight in the portfolio	57	43	
Weighted average return			7.55%
Calculation of estimated return for 2010 – 11			
Expected dividend	20	3.5	
Capital gain by 31.03.11			
(220 × 0.2) + (250 × 0.5) + (280 × 0.3) – 220 = (253 – 220)	33	-	
(290 × 0.2) + (310 × 0.5) + (330 × 0.3) – 290 = (312 – 290)	-	22	
Yield	53	25.5	
* Market Value 01.04.10	220	290	
% return	24.09%	8.79%	
*Weight in portfolio (1,000 × 220) : (500 × 290)	60.3	39.7	
Weighted average (Expected) return			18.02%
(*The market value on 31.03.10 is used as the base for calculating yield for 10 – 11)			

(4 MARKS)

Calculation of Standard Deviation

M Ltd.

Exp. Market value	**Exp. Gain**	**Exp. Div.**	**Exp. yield (1)**	**Prob. Factor (2)**	**(1) × (2)**	**Dev. (P_M - $\overline{P_M}$)**	**Square of dev. (3)**	**(2) × (3)**
220	0	20	20	0.2	4	-33	1089	217.80
250	30	20	50	0.5	25	-3	9	4.50
280	60	20	80	0.3	24	27	729	218.70
					53			σ^2_M = 441.00

Standard Deviation (σ_M) 21

(2 MARKS)

N Ltd.

Exp. Market value	**Exp. Gain**	**Exp. Div.**	**Exp. yield (1)**	**Prob. Factor (2)**	**(1) × (2)**	**Dev. (P_N - $\overline{P_N}$)**	**Square of dev. (3)**	**(2) × (3)**
290	0	3.5	3.5	0.2	0.7	-22	484	96.80
310	20	3.5	23.5	0.5	11.75	-2	4	2.00
330	40	3.5	43.5	0.3	13.05	18	324	97.20
					25.5			**σ^2_N = 196.00**

Standard Deviation (σ_N) **14**

Share of company M Ltd. is more risky as the S.D. is more than company N Ltd.

(2 MARKS)

ANSWER 3(b)

(1) Cost of Capital

Retained earnings (45%)	Rs. 5 per share
Dividend (55%)	Rs. 6.11 per share
EPS (100%)	Rs. 11.11 per share
P/E Ratio	8 times
Market price	Rs. 11.11 x 8 = Rs. 88.88

Cost of equity capital

$$= \left(\frac{\text{Div}}{\text{Price}} \text{ x } 100\right) + \text{Growth \%} = \frac{\text{Rs.6.11}}{\text{Rs.88.88}} \text{ x } 100 + 15\% = 21.87\%$$

(4 MARKS)

(2) Market Price $= \left(\frac{\text{Dividend}}{\text{Cost of Capital (\%) - Growth Rate (\%)}}\right)$

$$= \frac{\text{Rs.6.11}}{(21.87 - 16)\%} = \text{Rs.104.08 per share}$$

(2 MARKS)

(3) Market Price = $\frac{\text{Rs.6.11}}{(20 - 19)\%} = \text{Rs.611.00 per share}$

(2 MARKS)

Alternative Solution

As in the question the sentence "The company retains 45% of its earnings which are Rs. 5 per share" amenable to two interpretations i.e. one is Rs. 5 as retained earnings (45%) and another is Rs.

5 is EPS (100%). Alternative solution is as follows:

(1) Cost of capital

EPS (100%)	Rs. 5 per share
Retained earnings (45%)	Rs. 2.25 per share
Dividend (55%)	Rs. 2.75 per share
P/E Ratio	8 times
Market Price	Rs. 5 x 8 = Rs. 40

Cost of equity capital

$$= \left(\frac{\text{Div}}{\text{Price}} \text{ x } 100\right) + \text{Growth \%} = \frac{\text{Rs.2.75}}{\text{Rs.40.00}} \text{ x } 100 + 15\% = 21.87\%$$

(4 MARKS)

(2) Market Price = $\left(\frac{\text{Dividend}}{\text{Cost of Capital (\%) - Growth Rate (\%)}}\right) = \frac{\text{Rs.2.75}}{(21.87-16)\%}$

= Rs. 46.85 per share

(2 MARKS)

(3) Market Price = $\frac{\text{Rs.2.75}}{(20-19)\%} = \text{Rs.275.00 per share}$.

(2 MARKS)

ANSWER 3(c)

Financial planning is the backbone of the business planning and corporate planning. It helps in defining the feasible area of operation for all types of activities and thereby defines the overall planning framework. Financial planning is a systematic approach whereby the financial planner helps the customer to maximize his existing financial resources by utilizing financial tools to achieve his financial goals.

There are 3 major components of Financial planning:

- Financial Resources (FR)
- Financial Tools (FT)
- Financial Goals (FG)

Financial Planning: FR + FT = FG

For an individual, financial planning is the process of meeting one's life goals through proper management of the finances. These goals may include buying a house, saving for children's education or planning for retirement. It is a process that consists of specific steps that helps in taking a big-picture look at where you financially are. Using these steps you can work out where you are now, what you may need in the future and what you must do to reach your goals.

Financial objectives are to be decided at the very outset so that rest of the decisions can be taken accordingly. The objectives need to be consistent with the corporate mission and corporate objectives. Financial decision making helps in analyzing the financial problems that are being faced by the corporate and accordingly deciding the course of action to be taken by it. The financial measures like ratio analysis, analysis of cash flow statement are used to evaluate the performance of the Company.

(4 MARKS)

ANSWER 4(a)

Calculation of NPV

Year	0	1	2	3
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696
Cash Flows in Rs.'000				
Real	-50000	-1500	-2000	-2500
Nominal (1)	-50000	-1650	-2420	-3327.50
Cash Flows in African Rand '000				
Real	-200000	50000	70000	90000
Nominal	-200000	70000	137200	246960
In Indian Rs. '000 (2)	-33333	9167	14117	19965
Net Cash Flow in Rs. '000 (1)+(2)	-83333	7517	11697	16637
PVF@20%	1	0.833	0.694	0.579
PV	-83333	6262	8118	9633

NPV of 3 years = -59320 (Rs. '000)

NPV of Terminal Value = (16637 / 0.20) x 0.579 = 48164 (Rs. '000)

Total NPV of the Project = -59320 (Rs. '000) + 48164 (Rs.'000) = -11156 (Rs.'000)

(8 MARKS)

ANSWER 4(b)

Compute Value of Equity

Simple Ltd.

Rs. in Lacs

	High Growth	**Medium Growth**	**Slow Growth**
Debit + Equity	820	550	410
Less: Debt	460	460	460
Equity	360	90	-50

Since the Company has limited liability the value of equity cannot be negative therefore the value of equity under slow growth will be taken as zero because of insolvency risk and the value of debt is taken at 410 lacs. The expected value of debt and equity can then be calculated as:

(2 MARKS)

Simple Ltd.

Rs. in Lacs

	High Growth		**Medium Growth**		**Slow Growth**		**Expected Value**
	Prob.	**Value**	**Prob.**	**Value**	**Prob.**	**Value**	
Debt	0.20	460	0.60	460	0.20	410	450
Equity	0.20	360	0.60	90	0.20	0	126
		820		550		410	576

(2 MARKS)

Dimple Ltd.

Rs. in Lacs

	High Growth		Medium Growth		Slow Growth		Expected Value
	Prob.	Value	Prob.	Value	Prob.	Value	
Equity	0.20	985	0.60	760	0.20	525	758
Debt	0.20	65	0.60	65	0.20	65	65
		1050		825		590	823

(2 MARKS)

Expected Values

Rs. in Lacs

Equity		Debt	
Simple Ltd.	126	Simple Ltd.	450
Dimple Ltd.	758	Dimple Ltd.	65
	884		**515**

(2 MARKS)

ANSWER 4(c)

The standard deviation of the daily change in the investment in each asset is Rs. 2,00,000 i.e. 2 lakhs. The variance of the portfolio's daily change is

$V = 2^2 + 2^2 + 2 \times 0.3 \times 2 \times 2 = 10.4$

σ (Standard Deviation) = $\sqrt{10.4}$ = Rs. 3.22 lakhs

Accordingly, the standard deviation of the 10-day change is

Rs. 3.22 lakhs x$\sqrt{10}$ = Rs. 10.18 lakh

From the Normal Table we see that z score for 1% is 2.33. This means that 1% of a normal distribution lies more than 2.33 standard deviations below the mean. The 10-day 99 percent value at risk is therefore

2.33 × Rs. 10.18 lakh = Rs. 23.72 lakh

(4 MARKS)

ANSWER 5(a)

(a) Determination of Weighted Average Cost of Capital

Sources of funds	Cost (%)	Proportions	Weights	Weighted Cost
Equity Stock	16	12/20	0.60	9.60
12% Bonds	12%(1-0.30) = 8.40	8/20	0.40	3.36
				12.96 say 13

(0.5 MARK)

(b) Schedule of Depreciation

$ Million

Year	Opening Balance of Fixed Assets	Addition during the year	Total	Depreciation @ 15%
1	17.00	0.50	17.50	2.63
2	14.87	0.80	15.67	2.35
3	13.32	2.00	15.32	2.30
4	13.02	2.50	15.52	2.33
5	13.19	3.50	16.69	2.50
6	14.19	2.50	16.69	2.50
7	14.19	1.50	15.69	2.35
8	13.34	1.00	14.34	2.15

(1.5 MARKS)

(c) Determination of Investment **$ Million**

Year	Investment Required			Existing Investment	Additional Investment
	For Capital Expenditure	CA (20% of Revenue)	Total		
1	0.50	1.60	2.10	3.00	0.00
2	0.80	2.00	2.80	2.50*	0.30
3	2.00	3.00	5.00	2.00**	3.00
4	2.50	4.40	6.90	3.00	3.90
5	3.50	6.00	9.50	4.40	5.10
6	2.50	5.20	7.70	6.00	1.70
7	1.50	4.60	6.10	5.20	0.90
8	1.00	4.00	5.00	4.60	0.40

* Balance of CA in Year 1 ($3 Million) – Capital Expenditure in Year 1($ 0.50 Million)

** Similarly balance of CA in Year 2 ($2.80) – Capital Expenditure in Year 2($ 0.80 Million)

(3 MARKS)

(d) Determination of Present Value of Cash Inflows **$ Million**

Particulars	Years							
	1	2	3	4	5	6	7	8
Revenue (A)	8.00	10.00	15.00	22.00	30.00	26.00	23.00	20.00
Less: Expenses								
Variable Costs	3.20	4.00	6.00	8.80	12.00	10.40	9.20	8.00
Fixed cash operating cost	1.60	1.60	1.60	1.60	2.00	2.00	2.00	2.00
Advertisement Cost	0.50	1.50	1.50	3.00	3.00	3.00	1.00	1.00
Depreciation	2.63	2.35	2.30	2.33	2.50	2.50	2.35	2.15
Total	7.93	9.45	11.40	15.73	19.50	17.90	14.55	13.15

Expenses (B)								
EBIT (C) = (A) - (B)	0.07	0.55	3.60	6.27	10.50	8.10	8.45	6.85
Less: Taxes@30% (D)	0.02	0.16	1.08	1.88	3.15	2.43	2.53	2.06
NOPAT (E) = (C) - (D)	0.05	0.39	2.52	4.39	7.35	5.67	5.92	4.79
Gross Cash Flow (F) =(E) + Dep	2.68	2.74	4.82	6.72	9.85	8.17	8.27	6.94
Less: Investment in Capital Assets								
plus Current Assets (G)	0	0.30	3.00	3.90	5.10	1.70	0.90	0.40
Free Cash Flow (H) =	2.68	2.44	1.82	2.82	4.75	6.47	7.37	6.54
(F) - (G)								
PVF@13% (I)	0.885	0.783	0.693	0.613	0.543	0.480	0.425	0.376
PV (H)(I)	2.371	1.911	1.261	1.729	2.579	3.106	3.132	2.46

Total present value = $ 18.549 million

(4 MARKS)

(e) Determination of Present Value of Continuing Value (CV)

$$CV = \frac{FCF_9}{k-g} = \frac{\$6.54 \text{ million } (1.05}{0.13-0.05} = \frac{\$6.867 \text{ million}}{0.08} = \$85.8375 \text{ million}$$

Present Value of Continuing Value (CV) = $85.8376 million X $PVF_{13\%,8}$ = $85.96875 million X 0.376 = $32.2749 million

(1 MARK)

(i) Value of Firm

	$ Million
Present Value of cash flow during explicit period	18.5490
Present Value of Continuing Value	32.2749
Total Value	50.8239

(1 MARK)

(ii) Value of Equity

	$ Million
Total Value of Firm	50.8239
Less: Value of Debt	8.0000
Value of Equity	42.8239

(1 MARK)

ANSWER 5(b)

In semi – strong form of stock market, the share price should accurately reflect new relevant information when it is made publicly available including Implant Inc. expansion scheme and redemption of the term loan.

The existing Market Value $ 2 × 7,000,000		$ 14,000,000
The new investment has an expected NPV		$ 2,200,000
Proceeds of New Issue		$ 15,000,000
Issue Cost of		($ 6,00,000)
PV of Benefit of early redemption		
Interest of $ 9,00,000 ($ 6,000,000 × 15%) × 3.791	3,411,900	
PV of Repayment in 5 years $ 6,000,000 × 0.621	3,726,000	
	7,137,900	
Redemption Cost Now	(6,000,000)	
Penalty charges	(350,000)	787,900
Expected Total Market Value		31,387,900
New No. of shares (30 Million + 7 Million)		37,00,000
Expected Share Price of Company		**$ 0.848**

(4 MARKS)

ANSWER 5(c)

The Dow Theory

The Dow Theory is one of the oldest and most famous technical theories. It was originated by Charles Dow, the founder of Dow Jones Company in late nineteenth century. It is a helpful tool for determining the relative strength of the stock market. It can also be used as a barometer of business.

The Dow Theory is based upon the movements of two indices, constructed by Charles Dow, Dow Jones Industrial Average (DJIA) and Dow Jones Transportation Average (DJTA). These averages reflect the aggregate impact of all kinds of information on the market. The movements of the market are divided into three classifications, all going at the same time; the primary movement, the secondary movement, and the daily fluctuations. The primary movement is the main trend of the market, which lasts from one year to 36 months or longer. This trend is commonly called bear or bull market. The secondary movement of the market is shorter in duration than the primary movement, and is opposite in direction. It lasts from two weeks to a month or more. The daily fluctuations are the narrow movements from day-to-day. These fluctuations are not part of the Dow Theory interpretation of the stock market. However, daily movements must be carefully studied, along with primary and secondary movements, as they go to make up the longer movement in the market.

Thus, the Dow Theory's purpose is to determine where the market is and where is it going, although not how far or high. The theory, in practice, states that if the cyclical swings of the stock market averages are successively higher and the successive lows are higher, then the market trend is up and a bullish market exists. Contrarily, if the successive highs and successive lows are lower, then the direction of the market is down and a bearish market exists.

Charles Dow proposed that the primary uptrend would have three moves up, the first one being caused by accumulation of shares by the far-sighted, knowledgeable investors, the second move would be caused by the arrival of the first reports of good earnings by corporations, and the last

move up would be caused by widespread report of financial well-being of corporations. The third stage would also see rampant speculation in the market. Towards the end of the third stage, the far-sighted investors, realizing that the high earnings levels may not be sustained, would start selling, starting the first move down of a downtrend, and as the non-sustainability of high earnings is confirmed, the second move down would be initiated and then the third move down would result from distress selling in the market.

(4 MARKS)

ANSWER 6(a)

Receipts using a forward contract (1,00,000/.0.02127)	= Rs. 47,01,457
Receipts using currency futures	
The number of contracts needed is (1,00,000 / 0.02118)/4, 72,000 = 10	
Initial margin payable is 10 × Rs. 15,000 = Rs. 1,50,000	
On September 1 Close at 0.02134	= 46,88,233
Receipts = US$ 1,00,000/ 0.02133	= 46,88,233
Variation Margin = [(0.02134 – 0.02118) × 10 × 472000/-]/0.02133	
OR (0.00016 × 10 × 472000)/ 0.02133 = 755.2/0.02133	35,406
	47,23,639
Less : Interest Cost – 1,50,000 × 0.08 × 3/12	Rs. 3,000
Net Receipts	Rs. 47,20,639
Receipts under different methods of hedging	
Forward contract	Rs. 47,01,457
Futures	Rs. 47,20,639
No hedge	
US$ 1,00,000/ 0.02133	Rs. 46,88,233
The most advantageous option would have been to hedge with futures.	

(6 MARKS)

ANSWER 6(b)

(i) Calculation of Bond Duration Bond A

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	10	0.917	9.17	0.086	0.086
2	10	0.842	8.42	0.079	0.158
3	10	0.772	7.72	0.073	0.219
4	10	0.708	7.08	0.067	0.268
5	10	0.650	6.50	0.061	0.305
6	10	0.596	5.96	0.056	0.336
7	10	0.547	5.47	0.051	0.357
8	10	0.502	5.02	0.047	0.376
9	10	0.460	4.60	0.043	0.387
10	110	0.4224	46.46	0.437	4.370
			106.40	1.000	6.862

Duration of the bond is 6.862 years or 6.86 year

(2 MARKS)

Bond B

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	11	0.917	10.087	0.091	0.091
2	11	0.842	9.262	0.083	0.166
3	11	0.772	8.492	0.076	0.228
4	11	0.708	7.788	0.070	0.280
5	11	0.650	7.150	0.064	0.320
6	11	0.596	6.556	0.059	0.354
7	11	0.547	6.017	0.054	0.378
8	111	0.502	55.772	0.502	4.016
			111.224	1.000	5.833

Duration of the bond B is 5.833 years or 5.84 years

(2 MARKS)

Bond C

Year	Cash flow	P.V. @ 9%		Proportion of bond value	Proportion of bond value x time (years)
1	9	0.917	8.253	0.082	0.082
2	9	0.842	7.578	0.076	0.152
3	9	0.772	6.948	0.069	0.207
4	9	0.708	6.372	0.064	0.256
5	109	0.650	70.850	0.709	3.545
			100.00	1.000	4.242

Duration of the bond C is 4.242 years or 4.24 years

(1 MARK)

(ii) Amount of Investment required in Bond B and C

Period required to be immunized 6.000 Year
Less: Period covered from Bond A 3.087 Year
To be immunized from B and C 2.913 Year

Let proportion of investment in Bond B and C is b and c respectively then

$$b + c = 0.55 \quad (1)$$

$$5.883b + 4.242c = 2.913 \quad (2)$$

On solving these equations, the value of b and c comes 0.3534 or 0.3621 and 0.1966 or 0.1879 respectively and accordingly, the % of investment of B and C is 35.34% or 36.21% and 19.66 % or 18.79% respectively.

(2 MARKS)

(iii) With revised yield the Revised Duration of Bond stands

0.45 x 7.15 + 0.36 x 6.03 + 0.19 x 4.27 = 6.20 year

No portfolio is not immunized as the duration of the portfolio has been increased from 6 years to 6.20 years.

(1 MARK)

(iv) New percentage of B and C bonds that are needed to immunize the portfolio.

Period required to be immunized	6.0000 Year
Less: Period covered from Bond A	3.2175 Year
To be immunized from B and C	2.7825 Year

Let proportion of investment in Bond B and C is b and c respectively,

then $b + c = 0.55$

$6.03b + 4.27c = 2.7825$ $b = 0.2466$

On solving these equations, the value of b and c comes 0.2466 and 0.3034 respectively and accordingly, the % of investment of B and C is 24.66% or 25% and 30.34 % or 30.00% respectively.

(2 MARKS)

ANSWER 6(c)

The various hints that may provide counter party risk are as follows:

(a) Failure to obtain necessary resources to complete the project or transaction undertaken.

(b) Any regulatory restrictions from the Government.

(c) Hostile action of foreign government.

(d) Let down by third party.

(e) Have become insolvent.

The various techniques to manage this type of risk are as follows:

(1) Carrying out Due Diligence before dealing with any third party.

(2) Do not over commit to a single entity or group or connected entities.

(3) Know your exposure limits.

(4) Review the limits and procedure for credit approval regularly.

(5) Rapid action in the event of any likelihood of defaults.

(6) Use of performance guarantee, insurance or other instruments.

(4 MARKS)

OR

ANSWER 6(c)

Pricing of the securitized Instruments

Pricing of securitized instruments in an important aspect of securitization. While pricing the instruments, it is important that it should be acceptable to both originators as well as to the investors. On the same basis pricing of securities can be divided into following two categories:

From Originator's Angle

From originator's point of view, the instruments can be priced at a rate at which originator has to incur an outflow and if that outflow can be amortized over a period of time by investing the amount raised through securitization.

From Investor's Angle

From an investor's angle security price can be determined by discounting best estimate of expected future cash flows using rate of yield to maturity of a security of comparable security with respect to credit quality and average life of the securities. This yield can also be estimated by referring the yield curve available for marketable securities, though some adjustments is needed on account of spread points, because of credit quality of the securitized instruments.

(4 MARKS)