SUGGESTED SOLUTION

FINAL Nov. 2019 EXAM

SUBJECT- SFM

Test Code – FNJ 7059

BRANCH - () (Date :)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.

Tel : (022) 26836666

Answer 1:
(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 Expenses (B)	7.93	9.45	11.40	15.73	19.50	17.90	14.55	13.15
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 = $\frac{\text{FCF}_9}{k-g} = \frac{\$6.54 \text{ million } (1.05}{0.13-0.05} = \frac{\$6.867 \text{ million}}{0.08} = \$85.8375 \text{ million}$

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 1:

(B)

Some of the techniques used for economic analysis are:

(a) Anticipatory Surveys: They help investors to form an opinion about the future state of the economy. It incorporates expert opinion on construction activities, expenditure on plant and machinery, levels of inventory – all having a definite bearing on economic activities. Also future spending habits of consumers are taken into account.

In spite of valuable inputs available through this method, it has certain drawbacks:

(i) Survey results do not guarantee that intentions surveyed would materialize.

(ii) They are not regarded as forecasts per se, as there can be a consensus approach by the investor for exercising his opinion.

Continuous monitoring of this practice is called for to make this technique popular.

(b) Barometer/Indicator Approach: Various indicators are used to find out how the economy shall perform in the future. The indicators have been classified as under:

(i) Leading Indicators: They lead the economic activity in terms of their outcome. They relate to the time series data of the variables that reach high/low points in advance of economic activity.

(ii) Roughly Coincidental Indicators: They reach their peaks and troughs at approximately the same in the economy.

(iii) Lagging Indicators: They are time series data of variables that lag behind in their consequences vis-a- vis the economy. They reach their turning points after the economy has reached its own already.

(c) Economic Model Building Approach: In this approach, a precise and clear relationship between dependent and independent variables is determined. GNP model building or sectoral analysis is used in practice through the use of national accounting framework. The steps used are as follows:

(i) Hypothesize total economic demand by measuring total income (GNP) based on political stability, rate of inflation, changes in economic levels.

(ii) Forecasting the GNP by estimating levels of various components viz. consumption expenditure, gross private domestic investment, government purchases of goods/services, net exports.

(iii) After forecasting individual components of GNP, add them up to obtain the forecasted GNP.

(iv) Comparison is made of total GNP thus arrived at with that from an independent agency for the forecast of GNP and then the overall forecast is tested for consistency. This is carried out for ensuring that both the total forecast and the component wise forecast fit together in a reasonable manner.

(4 MARKS)

Answer 1:

(C)

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	1.000

Duration of the Bond is 1 year

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	737.64	0.788	3.152
			936.52	1.000	3.563

Duration of the Bond is 3.563 years

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. 52 bonds	= Rs. 32,214 / Rs. 936.52 = 34.40 i.e. approx. 34 bonds

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.

(4 MARKS)

Answer 2:
(A)

We have $E_p = W_1E_1 + W_3E_3 + ... W_nE_n$

and for standard deviation $\sigma^2_p \sum_{i=1}^{n}\sum_{j=1}^{n} w_i w_i \sigma_{ij}$

$\sigma^2_p \sum_{i=1}^{n}\sum_{j=1}^{n} w_i w_j \rho_{ij} \sigma_i \sigma_j$

Two asset portfolio

$\sigma^2_p = w^2{}_1 w_1^2 + w_2^2\sigma_2^2 + 2w_1 w_2 \sigma_1 \sigma_2 \rho_{12}$

(1 MARK)

Substituting the respective values we get,

(i) All funds invested in B

Ep = 12%

σ_p = 10%

(1 MARK)

(ii) 50% of funds in each of B & D

Ep = 0.50X12%+0.50X20%=16%

σ^2_p = $(0.50)^2(10\%)^2 + (0.50)^2(18\%)^2 + 2(0.50)(0.50)(0.15)(10\%)(18\%)$

σ^2_p = 25 + 81 + 13.5 = 119.50

σ_p = 10.93%

(1 MARK)

(iii) 75% in B and 25% in D

Ep = 0.75%X12%+0.25%X20=14%

σ^2_p = $(0.75)^2(10\%)^2 + (0.25)^2(18\%)^2 + 2(0.75)(0.25)(0.15)(10\%)(18\%)$

σ^2_p = 56.25 + 20.25 + 10.125 = 86.625

σ_p = 9.31% **(1 MARK)**

(iv) All funds in D

Ep = 20%

σ_p = 18.0%

Portfolio	(i)	(ii)	(iii)	(iv)
Return	12	16	14	20
σ	10	10.93	9.31	18

(1 MARK)

In the terms of return, we see that portfolio (iv) is the best portfolio. In terms of risk we see that portfolio (iii) is the best portfolio.

(1 MARK)

Answer 2:

(B)

No. of the Future Contract to be obtained to get a complete hedge

$$= \frac{10000 \text{ x } 22 \text{ x } 1.5 \text{ - } 5000 \text{ x Rs.}40 \text{ x } 2}{Rs..1000}$$

$$= \frac{\text{Rs.}3{,}30{,}000 \text{ - Rs.}4{,}00{,}000}{Rs.1000} = 70 \text{ contracts}$$

Thus, by purchasing 70 Nifty future contracts to be long to obtain a complete hedge.

Cash Outlay

= 10000 x Rs. 22 – 5000 x Rs. 40 + 70 x Rs. 1,000

= Rs. 2,20,000 – Rs. 2,00,000 + Rs. 70,000 = Rs. 90,000

Cash Inflow at Close Out

= 10000 x Rs. 22 x 0.98 – 5000 x Rs. 40 x 1.03 + 70 x Rs. 1,000 x 0.985

= Rs. 2,15,600 – Rs. 2,06,000 + Rs. 68,950 = Rs. 78,550

Gain/ Loss

= Rs. 78,550 – Rs. 90,000 = - Rs. 11,450 (Loss)

(5 MARKS)

Answer 2:

(C)

Business Segment	Capital-to-	Segment Sales	Theoretical

	Sales		Values
Wholesale	0.85	€225000	€191250
Retail	1.2	€720000	€864000
General	0.8	€2500000	€2000000
Total value			€3055250

Business Segment	Capital-to-Assets	Segment Assets	Theoretical Values
Wholesale	0.7	€600000	€420000
Retail	0.7	€500000	€350000
General	0.7	€4000000	€2800000
Total value			€3570000

Business Segment	Capital-to- Operating Income	Operating Income	Theoretical Values
Wholesale	9	€75000	€675000
Retail	8	€150000	€1200000
General	4	€700000	€2800000
Total value			€4675000

Average theoretical value = $\dfrac{3055250 + 3570000 + 4675000}{3}$ = 3766750

(5 MARKS)

Answer 2:

(D)

There are four asset allocation strategies:

(a) Integrated Asset Allocation: Under this strategy, capital market conditions and investor objectives and constraints are examined and the allocation that best serves the investor’s needs while incorporating the capital market forecast is determined.

(b) Strategic Asset Allocation: Under this strategy, optimal portfolio mixes based on returns, risk, and co-variances is generated using historical information and adjusted periodically to restore target allocation within the context of the investor’s objectives and constraints.

(c) Tactical Asset Allocation: Under this strategy, investor’s risk tolerance is assumed constant
and the asset allocation is changed based on expectations about capital market conditions.

(d) Insured Asset Allocation: Under this strategy, risk exposure for changing portfolio values (wealth) is adjusted; more value means more ability to take risk.

(4 MARKS)

Answer 3:

(A)

(i) By entering into an FRA, firm shall effectively lock in interest rate for a specified future in the given it is 6 months. Since, the period of 6 months is starting in 3 months, the firm shall opt for 3 × 9 FRA locking borrowing rate at 5.94%.

In the given scenarios, the net outcome shall be as follows:

	If the rate turns out to be 4.50%	**If the rate turns out to be 6.50%**
FRA Rate	5.94%	5.94%
Actual Interest Rate	4.50%	6.50%
Loss/ (Gain)	1.44%	(0.56%)
FRA Payment / (Receipts)	€50 m × 1.44% × ½ =€360,000	€50m × 0.56% × ½ =(€140,000)
Interest after 6 months on €50 Million at actual rates	= €50m × 4.5% × ½= €1,125,000	= € 50m × 6.5% × ½= €1,625,000
Net Out Flow	€ 1,485,000	€1,485,000

Thus, by entering into FRA, the firm has committed itself to a rate of 5.94% shown as follows:

$$\frac{€1,485,000}{€50,000,000} \text{ x } 100 \text{ x } \frac{12}{6} = 5.94\%$$

(4 MARKS)

(ii) Since firm is a borrower it will like to off-set interest cost by profit on Future Contract. Accordingly, if interest rate rises it will gain hence it should sell interest rate futures.

No. of Contracts $= \frac{\text{Amount of Borrowing}}{\text{Contract Size}} \text{ x } \frac{\text{Duration of Loan}}{\text{3 months}}$

$$= \frac{€50,000,000}{€50,000} \text{ x } \frac{6}{3} = 2000 \text{ Contracts}$$

The final outcome in the given two scenarios shall be as follows:

	If the interest rate turns out to be 4.5%	**If the interest rate turns out to be 6.5%**
Future Course Action:		
Sell to open	94.15	94.15
Buy to close	95.50 (100 - 4.5)	93.50 (100 - 6.5)
Loss/ (Gain)	1.35%	(0.65%)
Cash Payment (Receipt) for	€50,000×2000×	€50,000×2000×0.65%
Future Settlement	1.35%×3/12	× 3/12

	= €337,500	= (€162,500)
Interest for 6 months on €50	€50 million × 4.5% × ½	€50 million × 6.5% × ½
million at actual rates	= €11,25,000	= €16,25,000
	€1,462,500	€1,462,500

Thus, the firm locked itself in interest rate of 5.85% shown as follows:

$$\frac{€1,462,500}{€50,000,000} \text{ x } 100 \text{ x } \frac{12}{6} = 5.85\%$$

(6 MARKS)

Answer 3:

(B)

(i) Statement Showing the Net Present Value of Project M

Year end	*Cash Flow (Rs.) (a)*	*C.E. (b)*	*Adjusted Cash flow (Rs.) (c) = (a) (b)*	*Present value factor at 6% (d)*	*Total Present value (Rs.) (e) = (c) (d)*
1	4,50,000	0.8	3,60,000	0.943	3,39,480
2	5,00,000	0.7	3,50,000	0.890	3,11,500
3	5,00,000	0.5	2,50,000	0.840	2,10,000
					8,60,980
Less: Initial Investment					8,50,000
Net Present Value					10,980

(3 MARKS)

Statement Showing the Net Present Value of Project N

Year end	*Cash Flow (Rs.)* (a)	C.E. (b)	Adjusted Cash flow (Rs.) (c) = (a) (b)	Present value factor (d)	Total Present value (Rs.) (e) = (c) (d)
1	4,50,000	0.9	4,05,000	0.943	3,81,915
2	4,50,000	0.8	3,60,000	0.890	3,20,400
3	5,00,000	0.7	3,50,000	0.840	2,94,000
					9,96,315
Less: Initial Investment					8,25,000
Net Present Value					1,71,315

Decision: Since the net present value of Project N is higher, so the project N should be accepted

(3 MARKS)

(ii) Certainty - Equivalent (C.E.) Co-efficient of Project M (2.0) is lower than Project N (2.4). This means Project M is riskier than Project N as "higher the riskiness of a cash flow, the lower will be the CE factor". If risk adjusted discount rate (RADR) method is used, Project M would be analysed with a higher rate.

RADR is based on the premise that riskiness of a proposal may be taken care of, by adjusting the discount rate. The cash flows from a more risky proposal should be discounted at a relatively higher discount rate as compared to other proposals whose cash flows are less risky. Any investor is basically risk averse. However, he may be ready to take risk provided he is rewarded for undertaking risk by higher returns. So, more risky the investment is, the greater would be the expected return. The expected return is expressed in terms of discount rate which is also the minimum required rate of return generated by a proposal if it is to be accepted. Therefore, there is a positive correlation between risk of a proposal and the discount rate.

(4 MARKS)

Answer 4:

(A)

Amount realized on selling Danish Kroner 10,00,000 at Rs. 6.5150 per Kroner = Rs. 65,15,000.

Cover at London:

Bank buys Danish Kroner at London at the market selling rate.

Pound sterling required for the purchase (DKK 10,00,000 ÷ DKK 11.4200) = GBP 87,565.67

Bank buys locally GBP 87,565.67 for the above purchase at the market selling rate of Rs. 74.3200.

The rupee cost will be	= Rs. 65,07,88
Profit (Rs. 65,15,000 - Rs. 65,07,881)	= Rs. 7,119

(3 MARKS)

Cover at New York:

Bank buys Kroners at New York at the market selling rate.

Dollars required for the purchase of Danish Kroner (DKK10,00,000 ÷ 7.5670) = USD 1,32,152.77 Bank buys locally USD 1,32,152.77 for the above purchase at the market selling rate of Rs. 49.2625.

The rupee cost will be	= Rs. 65,10,176.
Profit (Rs. 65,15,000 - Rs. 65,10,176)	= Rs. 4,824

The transaction would be covered through London which gets the maximum profit of Rs. 7,119 or lower cover cost at London Market by (Rs. 65,10,176 - Rs. 65,07,881) = Rs. 2,295

(3 MARKS)

Answer 4:

(B)

(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

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

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

(b) Calculation of Capital Gearing Ratio

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

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

(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)	31,040

Yield on equity shares	3,51,040

Yield on equity shares % = $\dfrac{\text{Yield on shares}}{\text{Equity share capital}}$ x 100

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

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.

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.

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	0.36
	10.80

Value of Equity Share

$$= \frac{\text{Actual yeild}}{\text{Expected yield}} \text{ x paid up value of share} = \frac{4.39}{10.80} \text{ x } 100 = \text{Rs.}40.65\,.$$

(8 MARKS)

Answer 4:

(C)

The physical settlement in case of derivative contracts means that underlying assets are actually delivered on the specified delivery date. In other words, traders will have to take delivery of the shares against position taken in the derivative contract.

In case of cash settlement, the seller of the derivative contract does not deliver the underlying asset but transfers the Cash. It is similar to Index Futures where the purchaser, who wants to settle the contract in cash, will have to pay or receive the difference between the Spot price of the contract on the settlement date and the Futures price decided beforehand since it is impossible to effect the physical ownership of the underlying securities.

The main advantage of cash settlement in derivative contract is high liquidity because of more derivative volume in cash segment. Moreover, the underlying stocks in derivative contracts has constricted bid – ask spreads. And, trading in such stocks can be effected at lower cost. If the stock is liquid, the impact cost of bigger trades will be lower.

Further, an adverse move can be hedged. For example, the investors can take a covered short derivative position by selling the future while still holding the underlying security.

Also, a liquid derivative market facilitates the traders to do speculation. The speculative trading may worry the regulators but it is also true that without speculative trading, it will not be possible for the derivative market to stay liquid.

So, this leads to some arguments in favour of physical settlement in derivative contract. One advantage of physical settlement is that it is not subject to manipulation by both the parties to the derivative contract. This is so because the entire activity is monitored by the broker and the clearing exchange.

However, one main disadvantage of physical delivery is that it is almost impossible to short sell a stock in the Indian Market.

Therefore, in the end, it can be concluded that, though, physical settlement in derivative contract does curb manipulation it also affects the liquidity in the derivative segment.

(6 MARKS)

Answer 5:
(A)

(i) Benefits to Grape Fruit Ltd.

(a) Reduction of liabilities payable

	Rs. in lakhs
Reduction in equity share capital (6 lakh shares x Rs.75 per share)	450
Reduction in preference share capital (2 lakh shares x Rs.50 per share)	100
Waiver of outstanding debenture Interest	26

	Waiver from trade creditors (Rs.340 lakhs x 0.25)	85
		661
(b)	*Revaluation of Assets*	
	Appreciation of Land and Building (Rs.450 lakhs - Rs.200 lakhs)	250
	Total (A)	911

(3 MARKS)

Amount of Rs.911 lakhs utilized to write off losses, fictious assets and over- valued assets.

Writing off profit and loss account	525
Cost of issue of debentures	5
Preliminary expenses	10
Provision for bad and doubtful debts	15
Revaluation of Plant and Machinery (Rs.300 lakhs – Rs.180 lakhs)	120
Total (B)	675
Capital Reserve (A) – (B)	236

(2 MARKS)

(ii) Balance sheet of Grape Fruit Ltd as at 31st March 2011 (after re-construction)

(Rs. in lakhs)

Liabilities	Amount	Assets		Amount
12 lakhs equity shares of Rs. 25/- each	300	Land & Building		450
10% Preference shares of Rs. 50/- each	100	Plant & Machinery		180
Capital Reserve	236	Furnitures & Fixtures		50
9% debentures	200	Inventory		150
Loan from Bank	74	Sundry debtors	70	
Trade Creditors	255	Prov. for Doubtful Debts	-15	55
		Cash-at-Bank(Balancing figure)*		280
	1165			1165

*Opening Balance of Rs.130/- lakhs + Sale proceeds from issue of new equity shares Rs.150/- lakhs.

(5 MARKS)

Answer 5:

(B)

Steps in securitization mechanism:

(1) Creation of Pool of Assets

The process of securitization begins with creation of pool of assets by segregation of assets backed by similar type of mortgages in terms of interest rate, risk, maturity and concentration units.

(2) Transfer to SPV

Once assets have been pooled, they are transferred to Special Purpose Vehicle (SPV) especially created for this purpose.

(3) Sale of Securitized Papers

SPV designs the instruments based on nature of interest, risk, tenure etc. based on pool of assets. These instruments can be Pass Through Security or Pay Through Certificates.

(4) Administration of assets

The administration of assets in subcontracted back to originator which collects principal and interest from underlying assets and transfer it to SPV, which works as a conduct.

(5) Recourse to Originator

Performance of securitized papers depends on the performance of underlying assets and unless specified in case of default they go back to originator from SPV.

(6) Repayment of funds

SPV will repay the funds in form of interest and principal that arises from the assets pooled.

(7) Credit Rating to Instruments

Sometime before the sale of securitized instruments credit rating can be done to assess the risk of the issuer.

(5 MARKS)

Answer 5:

(C)

(i) Computation of Expected Return from Portfolio

Security	**Beta (β)**	**Expected Return (r) as per CAPM**	**Amount (Rs. Lakhs)**	**Weights(w)**	**wr**
Moderate	0.50	8%+0.50(10% - 8%) = 9%	60	0.115	1.035
Better	1.00	8%+1.00(10% - 8%) = 10%	80	0.154	1.540
Good	0.80	8%+0.80(10% - 8%) = 9.60%	100	0.192	1.843
V. Good	1.20	8%+1.20(10% - 8%) = 10.40%	120	0.231	2.402
Best	1.50	8%+1.50(10% - 8%) = 11%	160	0.308	3.388
Total			520	1	10.208

Thus Expected Return from Portfolio 10.208% say 10.21%.

(3 MARKS)

Alternatively, it can be computed as follows:

Average β = $0.50 \text{ x } \frac{60}{520} + 1.00\text{x}\frac{80}{520} + 0.80 \text{ x } \frac{100}{520} + 1.20 \text{ x } \frac{120}{520} + 1.50 \text{ x } \frac{160}{520} = 1.104$

As per CAPM

= 0.08 + 1.104(0.10 – 0.08) = 0.10208 i.e. 10.208%

(3 MARKS)

(ii) As computed above the expected return from Better is 10% same as from Nifty, hence there will be no difference even if the replacement of security is made. The main logic behind this neutrality is that the beta of security 'Better' is 1 which clearly indicates that this security shall yield same return as market return.

(2 MARKS)

Answer 6:

(A) Startup means an entity, incorporated or registered in India

1. Up to 10 years from its date of incorporation
2. Incorporated as either a Private Limited Company or a Registered Partnership Firm or a Limited Liability Partnership
3. Should have an annual turnover not exceeding Rs. 100 crore for any of the financial years since its incorporation
4. Entity should not have been formed by splitting up or reconstructing an already existing business
5. Should work towards development or improvement of a product, process or service and /or have scalable business model with high potential for creation of wealth & employment.

(5 MARKS)

Answer 6:

(B)

(i) Return of Mrs. Charu invested in Plan A (Dividend Reinvestment) (Amount in Rs.)

Date	Investment	Dividend payout(%)	Dividend Re-invested (Closing Units X Face value of Rs.10 X Dividend Payout %)	NAV	Units	Closing Unit Balance" Units
01.04.2009	1,00,000.00			10.00	10,000.00	10,000.00
28.07.2013		20	20,000.00	30.70	651.47	10,651.47
31.03.2014		70	74,560.29	58.42	1,276.28	11,927.75

31.10.2017		40	47,711.00	42.18	1,131.13	13,058.88
15.03.2018		25	32,647.20	46.45	702.85	13,761.73
24.03.2019		40	55,046.92	48.10	1,144.43	14,906.16

Redemption value 14,906.16 x 53.75	8,01,206.10
Less: Security Transaction Tax (STT) is 0.2%	1,602.41
Net amount received	7,99,603.69
Less: Short term capital gain tax @ 10% on 1,144.43 (53.64* – 48.10 ≈) = 6,340	634
Net of tax	7,98,969.69
Less: Investment	1,00,000.00
	6,98,969.69

*(53.75 – STT @ 0.2%) ≈ This value can also be taken as zero

Annual average return (%) $\frac{6,98,969.69}{1,00,000} \times \frac{12}{124} \times 100 = 67.64\%$

(4 MARKS)

(ii) Return of Mr. Anand invested in Plan B – (Bonus)

(Amount in Rs.)				
Date	**Units**	**Bonus units**	**Total Balance**	**NAV per unit**
01.04.2009	10,000		10,000	10
31.03.2014		12,500	22,500	31.05
31.03.2018		7,500	30,000	20.05
24.03.2019		7,500	37,500	19.95

Redemption value 37,500 x 22.98	8,61,750.00
Less: Security Transaction Tax (STT) is 0.2%	1,723.50
Net amount received	8,60,026.50
Less: Short term capital gain tax @ 10% 7,500 x(22.93† – 19.95) = 22,350	2,235.00
Net of tax	8,57,791.50
Less: Investment	1,00,000.00
Net gain	7,57,791.50

† (22.98 – STT @ 0.2%)

Annual average return (%) $\frac{7,57,791.50}{1,00,000} \times \frac{12}{124} \times 100 = 73.33\%$

(3 MARKS)

(iii) Return of Mr. Bacchan invested in Plan C – (Growth)

Particulars	(Amount in Rs.)
Redemption value 10,000 x 82.07	8,20,700.00
Less: Security Transaction Tax (S.T.T) is .2%	1,641.40
Net amount received	8,19,058.60
Less: Short term capital gain tax @ 10%	0.00
Net of tax	8,19,058.60
Less: Investment	1,00,000.00
Net gain	7,19,058.60

Annual average return (%) $\frac{7,19,058}{1,00,000}$ x $\frac{12}{124}$ x 100 = 69.59%

Note: Alternatively, figure of * and † can be taken as without net of Tax because, as per Proviso 5 of Section 48 of IT Act, no deduction of STT shall be allowed in computation of Capital Gain.

(3 MARKS)

Answer 6:

(C)

Particulars	**Systematic Risk**	**Unsystematic Risk**
Meaning	Risk inherent to the entire market or entire market segment.	Risk inherent to the specific company or industry.
Control	Uncontrollable by an organization	Controllable by an organization
Nature	Macro in nature	Micro in nature
Types	Interest rate risk, market risk, purchasing power/ inflationary risk	Business /liquidity risk, financial / credit risk
Also Known as	Market risk, Non diversifiable risk	Diversifiable risk
Example	Recession and wars all represent sources of systematic risk because they affect the entire market and cannot be avoided through diversification.	Sudden strike by the employees of a company you have shares in, is considered to be unsystematic risk.

So in short what matters the most to the investor is to know the systematic risk of his investment. Systematic risk is measured by a statistical measure called BETA.

(5 MARKS)