



CA AFM

Suggested Solution

Test-14 (of Test series)

Test-1 (of full syllabus)

100 Marks

Mission 80+ for M/J 25



Case Scenario-I

1.	(d)	400
2.	(b)	900
3.	(c)	40.31%
4.	(a)	54.08%
5.	(d)	6%
6.	(c)	12.8%

Hint:

(i) Standard deviation of A & B:

(a) Stock-A:

$$\text{systematic risk} = \sigma_m^2 \times \beta_A^2 \\ = (25)^2 \times (.80)^2 = 400$$

$$\text{unsystematic risk } [\sigma_{e(A)}^2] = .1225 \\ [\text{specific variance}] = (.1225 \times 100 \times 100) \\ = 1225$$

$$\sigma_A^2 = 400 + 1225 = 1625 \\ \sigma_A = \sqrt{1625} = \boxed{40.31\%} \text{ Ans}$$

(b) Stock-B:

$$\text{Systematic risk} = \sigma_m^2 \times \beta_B^2 \\ = (25)^2 \times (1.2)^2 = 900$$

$$\text{unsystematic risk } [\sigma_{e(B)}^2] = .2025 \\ [\text{i.e., } .2025 \times 100 \times 100] \\ = 2025$$

$$\sigma_B^2 = 900 + 2025 = 2925$$

$$\sigma_B = \sqrt{2925} = \boxed{54.08\%} \text{ Ans}$$

(ii) Treynor Ratio of Stock-A = $\frac{R - R_f}{\text{beta}} = \frac{14 - R_f}{0.8}$

Treynor Ratio of Stock-B = $\frac{R - R_f}{\text{beta}} = \frac{18 - R_f}{1.2}$

Now, as per question

$$\frac{14 - R_f}{0.8} = \frac{18 - R_f}{1.2}$$

Or, $R_f = 6\%$



(iii) Expected return of the portfolio:

$$ER_{\text{port}} = R_A W_A + \beta_B W_B + R_T W_T$$

$$= (14 \times 25\%) + (18 \times 40\%) + (6 \times 35\%)$$

$$= \boxed{12.8\%} \text{ Ans}$$

Case Scenario-II

7.	(c)	6%
8.	(a)	58000
9.	(c)	1.20

Hint:

(i) Let X be the dividend yield

$$60,600 = 60,000 + 60,000 \times [9\% - x\%] \times 4/12$$

$$600 = 60,000 \times [9\% - x\%] \times 4/12$$

$$X = 6\%$$

(ii) Let turned out value of Sensex as on 1st Dec, 2021 be Y, then

$$58145 = Y + Y [9\% - 6\%] \times 1/12$$

$$58145 = Y + \frac{Y}{400}$$

$$y = 58,000$$

(iii) Future Value as on 1st sep-23 60,600

Contract size 25

Index Future value per contract 15,15,000

Index Future value of 12 contracts 1,81,80,000

At perfect hedge,

Portfolio Value $\times$ beta = Total value of future contract entered

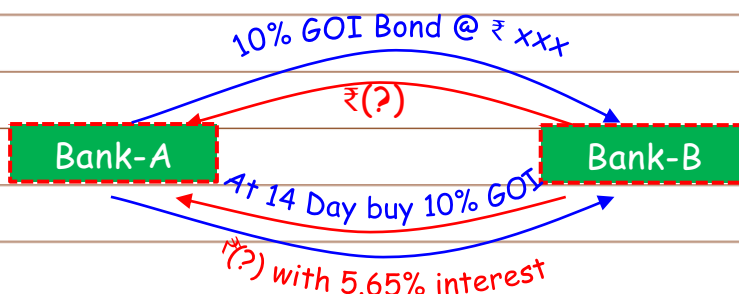
$$\text{Or, } 1,51,50,000 \times \text{beta} = 1,81,80,000$$

$$\text{Beta} = 1.2$$



Case Scenario-III		
10.	(d)	Repurchase Agreement
11.	(b)	10670
12.	(b)	8,36,52,800
13.	(a)	8,38,36,604
14.	(a)	728

Hint:



(i) Dirty Price:

Dirty Price of Bond = Clear Price + Accrued Interest

Accrued Interest = Face Value × Coupon rate

$$= 10000 \times 10\% \times \frac{262}{360} = ₹ 728$$

$$\therefore \text{Dirty Price} = 9942 + 728 = 10670$$

(ii) Repayment at Maturity:

[**Note:** ICAI assumed, Face Value of Bond sold under repo is 8 Cr.]

$$\text{No. of Bond Sold under repo} = \frac{800,00,000}{10000 \text{ (FV)}} = 8,000$$

Sale proceeds (8,000 × 10670)	853,60,000
Less: Initial Margin@ 2%	17,07,200
Net Proceeds	836,52,800

$$\begin{aligned} \text{Repayment at maturity} &= 836,52,800 \times \left(1 + 0.0565 \times \frac{14}{360}\right) \\ &= 838,36,604 \end{aligned}$$



Case Scenario-IV

15.	(d)	SGR reflects the maximum rate at which a firm can grow using only internally generated funds, without relying on external equity. It helps in financial planning and avoiding over-leverage.
16.	(c)	Growing beyond the sustainable rate causes financial stress due to increased capital requirements that internal funds cannot support, risking liquidity and solvency.
17.	(c)	While managing debt is important, relying solely on debt violates financial prudence and increases risk. The scenario emphasizes balance and internal funding over aggressive leveraging.
18.	(a)	SGR is a function of Return on Equity (ROE), which is influenced by asset turnover and net profit margin. Enhancing these improves internal financing capacity, and therefore, SGR.
19.	(b)	Improving net profit margin increases ROE (assuming equity remains constant), which directly increases SGR, provided payout ratio and turnover are unchanged.



Part II (Descriptive Questions)

Question-1(a) Solution:

Annual interest	=	£100 × 9% = £9
Current share price	=	£4.45
Share price at end of 5y	=	£4.45 × (1+0.065) ⁵ = £6.10
Conversion value at end of 5y	=	£6.10 × 20 share = £122
Let, Cost of debt	=	d%

(i) Floor Value:

$$\text{Floor Value} = [9 \times \text{PVIFA}(d\%, 5)] + [100 \times \text{PVIF}(d\%, 5)]$$

$$\text{or, } 108.20 = [9 \times \text{PVIFA}(d\%, 5)] + [100 \times \text{PVIF}(d\%, 5)]$$

Assume, $r = 7\%$

$$(9 \times 4.100) + (100 \times 0.713) = 108.20 \text{ (exact match)}$$

Hence, $d = 7\%$ (interpolation technique should be applied if other rate had been assumed)

Cost of debt = 7%

(ii) Market price of Optional Convertible Bond:

$$= [9 \times \text{PVIFA}(7\%, 5)] + [(\text{£100 or, £122 whichever is higher}) \times \text{PVIF}(7\%, 5)]$$

$$= (9 \times 4.100) + (122 \times 0.713) = \text{£123.9}$$

(iii) Conversion premium:

$$= \frac{B_0 - CV_0}{CV_0} \times 100$$

where, CV_0 = Conversion value at 0 year = $(20 \times 4.45) = 89$

$$= \frac{123.90 - 89}{89} = 39.21\%$$



$$\begin{aligned}
 \text{(iv) \% downside risk} &= \left(\frac{B_0 - \text{Floor Value}}{B_0} \right) \times 100 \\
 &= \frac{123.90 - 108.20}{123.90} \times 100 \\
 &= 12.67\%
 \end{aligned}$$

Question-1(b) Solution:

(i) Return of portfolio:

$$R_L = \frac{\sum \text{Return}}{n} = \frac{45\%}{5} = 9\%$$

$$R_K = \frac{40\%}{5} = 8\%$$

$$R_{\text{port}} = (R_L W_L) + (R_K W_K)$$

$$\begin{aligned}
 &= \left(9 \times \frac{1}{2}\right) + \left(8 \times \frac{1}{2}\right) \text{ [As question is silent, assumed equal investment]} \\
 &= 8.5\%
 \end{aligned}$$

Risk of portfolio:

R_L	$\bar{R}_L$	$(R_L - \bar{R}_L)$ [1]	$(R_L - \bar{R}_L)^2$	R_K	$\bar{R}_K$	$(R_K - \bar{R}_K)$ [2]	$(R_K - \bar{R}_K)^2$	[1] × [2]
10	9	1	1	11	8	3	9	3
4	9	-5	25	-6	8	-14	196	70
5	9	-4	16	13	8	5	25	-20
11	9	2	4	8	8	0	0	0
15	9	6	36	14	8	6	36	36
45	Total		82	40	Total		266	89

$\bar{R}_L = 9\%$, $\bar{R}_K = 8\%$, calculated above

$$\sigma_L = \sqrt{\frac{82}{5}} = 4.05\%$$

$$\sigma_K = \sqrt{\frac{266}{5}} = 7.29\%$$



$$\text{Covariance} = \frac{89}{5} = 17.80$$

$$\begin{aligned}\sigma_{\text{port}} &= \sqrt{(\sigma_L W_L)^2 + (\sigma_K W_K)^2 + 2W_L W_K \cdot \text{Covariance}(L, K)} \\ &= \sqrt{(4.05 \times \frac{1}{2})^2 + (7.20 \times \frac{1}{2})^2 + 2 \times \frac{1}{2} \times \frac{1}{2} \times 17.80} = 5.127\% \\ &\quad (\text{Assumed equal investment})\end{aligned}$$

(ii) Proportion of minimum risk portfolio:

$$\begin{aligned}W_L &= \frac{\sigma_K^2 - \text{Covariance}(L, K)}{\sigma_K^2 + \sigma_L^2 - 2\text{Covariance}(L, K)} \\ &= \frac{53.2 - 17.80}{53.2 + 16.4 - 2 \times 17.80} \\ &= \frac{35.4}{34} = 1.041 \\ W_K &= (1 - 1.041) = -0.041\end{aligned}$$

Question-2(a) Solution:

Particulars	Mark Ltd.	Mask Ltd.
EPS	Rs. 2,000 Lakhs/ 200 lakhs	Rs. 400 lakhs / 100 lakhs
	= Rs. 10	= Rs. 4
Market Price	Rs. 10 × 10 = Rs. 100	Rs. 4 × 5 = Rs. 20

- (i) The Swap ratio based on current market price is
Rs. 20 / Rs. 100 = 0.2 or 1 share of Mark Ltd. for 5 shares of Mask Ltd.
No. of shares to be issued = Rs. 100 lakhs × 0.2 = Rs. 20 lakhs.
- (ii) EPS after merger
= $\frac{\text{Rs. 2,000 lakhs} + \text{Rs. 400 lakhs}}{200 \text{ lakhs} + 20 \text{ lakhs}} = \text{Rs. 10.909}$
- (iii) If P/E ratio is adversely affected by 10%, New P/E ratio = 9
Market Value per share = Rs. 10.909 × 9 = Rs. 98.1818
- (iv) Market value of merged firm
= Rs. 98.1818 market price × 220 lakhs shares = 216 crores



(v) Gain from the merger:-

Post-merger market value of the merged firm Rs. 216 crores

Less: Pre-merger market value:

Mark Ltd. 200 Lakhs × Rs. 100 = 200 crores

Mask Ltd. 100 Lakhs × Rs. 20 = 20 crores

Gain from merger Rs. 4 crores

Appropriation of gains from the merger among shareholders:-

	<u>Mark Ltd.</u>	<u>Mask Ltd.</u>
Post-merger value	196.36 crores	19.64 crores
<u>Less: Pre-merger market value</u>	200.00 crores	20.00 crores
Loss to Shareholders	3.64 crores	0.36 crores

Question-2(b) Solution:

Importer needs USD to make payment. Hence, the importer needs to buy \$25,000. (i.e, sell ₹)

Original contract of importer:

Sell ₹100 @ \$1.6393 [Due date: 31-Oct-2015]

Equivalent INR for \$25,000 = ₹ $\frac{100 \times 25,000}{1.6393}$ i.e., ₹15,25,041

It means sell INR 15,25,041.

(i) Cost in respect of extension:

Merchant SR: ₹100 =	\$ 1.6493	1.6578
	- .086%	+ .15%
₹100 =	<u>\$ 1.6478</u>	<u>1.6603</u>

To cancel existing forward contract, buy INR 15,25,041

Importer has to buy ₹100 @\$1.6603

Or, Equivalent amount (₹15,25,041) = \$ $\frac{1.6603 \times 15,25,041}{100}$ = \$25,320.25

Loss/gain

Sell ₹15,25,041 @ \$ 25,000

Buy ₹15,25,041 @ \$ 25,320.25

Total loss = \$ 320.25



To settle loss, buy \$320.25 @ spot rate = $\frac{320.25 \times 100}{1.6478} = ₹19,435$

(ii) New forward contract rate:

SR	₹100 = \$ 1.6493	1.6578
	+ .86%	+ .98%
6m FR on 31-10-15:	₹100 = \$ 1.6635	1.6740
	-.086%	+ .15%
	₹100 = 1.6621	1.6765

Importer has to Sell ₹100 @ \$1.6621 to extend forward contract.

Question-3(a) Solution:

(i) Net Assets value of fund:

Particulars	"in Crore" Amount
<u>Market value of Shares</u>	
Pharma Companies $\left[\frac{80 \times 15500}{8600} \right]$	144.19
Construction Industries $\left[\frac{30 \times 4500}{2100} \right]$	64.29
Service sector Co. $\left[\frac{60 \times 4800}{2750} \right]$	104.73
IT Companies $\left[\frac{30 \times 33000}{16020} \right]$	61.80
Real Estate Co. $\left[\frac{10 \times 4100}{2550} \right]$	16.08


Investment in Bonds:

Listed Bonds $\left[\frac{14}{8.842} \times 12 \right]$	19.00
Unlisted Bonds	7.00
Cash and Cash equivalent	1.50
	418.59
Expense Payable	(3.50)
NAV of fund	415.09

(ii) Net Asset Value per unit = $\frac{\text{NAV of fund}}{\text{No. of units}}$

$= \frac{415.09 \text{ Cr.}}{4.20 \text{ Cr.}}$

$= 98.83$

(iii) Net Return (Annualised)

Initial Cost per unit

Investment in shares 210 Cr.

 $[80 + 30 + 60 + 30 + 10]$

 Investment in Bonds $[12 + 7]$ 19 Cr.

229 Cr.

 $\div$ No. of Units 4.2 Cr

Cost per unit ₹ 54.52

 Capital Gain $[98.83 - 54.52]$ 44.31

 Dividend 3×2 6

50.31 p.u.

Annualised Return = $\frac{50.31}{54.52} \times \frac{1}{2} = 46.14\%$



$$\begin{aligned}
 \text{(iv) Expense ratio} &= \frac{\text{Total Expense}}{\text{Avg. value of portfolio}} \\
 &= \frac{6.68 \text{ Cr.}}{322.045 \text{ Cr.}} \times 100 \\
 &= 2.07\%
 \end{aligned}$$

Note :

$$\text{Total Expense} = 480 \text{ L} + 150 \text{ L} + 38 \text{ L} = 668 \text{ L or } 6.68 \text{ Cr.}$$

$$\begin{aligned}
 \text{Avg. value of portfolio} &= \frac{415.09 + 229}{2} \\
 &= 322.045 \text{ Cr.}
 \end{aligned}$$

Question-3 (b) Solution:

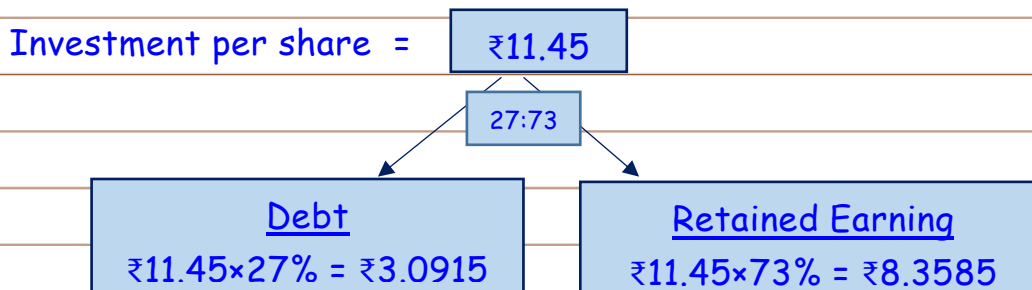
$$\begin{aligned}
 \text{Cost of Equity} &= R_f + \beta (R_m - R_f) \\
 &= 8.7 + 0.1 (10.3 - 8.7) = 8.86\%
 \end{aligned}$$

$$\text{No. of Shares} = 1300/40 = 32.5 \text{ crores}$$

$$\text{EPS} = \text{PAT} / \text{No. of shares} = 290/32.5 = ₹8.923$$

$$\begin{aligned}
 \text{Investment per share} &= (\text{capex} - \text{depreciation}) + \text{change in WC} \\
 &= (47 - 39) + 3.45 \\
 &= ₹11.45
 \end{aligned}$$

Proportion of retained earning & debt in investment:



$$\text{Investment per share out of retained earning} = ₹8.3585$$

$$D_0 = \text{EPS} - \text{Retained earning} = 8.923 - 8.3585 = 0.5645$$



PV of Dividend for 5 years:

Year	Dividend (₹)	PVF@8.86%	PV (₹)
D ₁	0.6096	0.9186	0.5600
D ₂	0.6584	0.8438	0.5556
D ₃	0.7111	0.7752	0.5512
D ₄	0.7680	0.7121	0.5469
D ₅	0.8294	0.6541	0.5425
PV of D ₁ , D ₂ , D ₃ , D ₄ & D ₅			2.7562

$$P_5 = \frac{D_6}{K_e - g} = \frac{0.8294(1+0.05)}{0.0886-0.05} = ₹ 22.56$$

$$PV \text{ of } P_5 = 22.56 / (1.0886)^5$$

$$= ₹22.56 \text{ crore} \times 0.6541 = ₹14.76$$

$$\therefore \text{Value of Share} = ₹ 2.7562 + ₹14.76 = ₹17.52$$

Question-4 (a) Solution:

$$\text{Expected Sale} = 600 + 20\% = 720$$

$$\text{Net Profit} = 720 \times 4\% = 28.80$$

$$\text{Dividend} = 28.80 \times 50\% = 14.40$$

$$\text{Retention} = 28.80 - 14.40 = 14.40$$

(i) External Fund Required:

Interpretation (Not for exam):

- We can increase sale by increasing capital investment.
- As company is proposing to increase sale by 20%, we have to increase investment/capital by 20%.
- Accordingly current liability will also increase by 20%.

	₹ in Lakh
Additional Fund required to increase sale	
⇒ [Existing Investment × 20%] = (1400 × 20%)	280
Less: Increase in Payables (200 × 20%)	(40)
Less: Profit retained for investemnt	(14.40)



External Fund required

225.60

(ii) (a) Amount to be raise from short term Loan:

$$\frac{\text{Sales}}{\text{S. T. Loan} + \text{Payables}} = \frac{4}{3}$$

$$\text{Or, } \frac{720}{x+240} = \frac{4}{3}$$

$$\therefore \text{New payable \& provision} \\ = 200 + 20\% = 240$$

$$\therefore 4x + 960 = 2160$$

$$\therefore x = \frac{2160-960}{4} = 300$$

Existing short term Loan

300

Proposed short term Loan

300

Fund to be raised by way of short term Loan

NIL

(b) Amount to be raised by way of Long term Loan:

$$\frac{\text{Fixed Assets}}{\text{Long term Loan}} = 1.50$$

$$\text{Or, } \frac{720}{\text{Long term Loan}} = 1.50$$

$$\therefore \text{New Fixed Assets} \\ = 600 + 20\% = 720$$

$$\therefore \text{Long term Loan (proposed)} = \frac{720}{1.5} = 480$$

$$\therefore \text{Fund to be raised by way of L.T. Loan} = 480 - 400 = 80$$

(c) Fund to be raised by way of Equity:

	₹
Total External Fund	225.60
Less: Fund raised from short term loan	(0)
Less: Fund raised from Long term Loan	(80)
Fund raised by way of Equity Capital	145.60



Question-4 (b) Solution:

Application of Blockchain: These are areas where Blockchain can be applied: -

(i)	Financial Services:	Blockchain can be used to provide an automated trade lifecycle in terms of the transaction log of any transaction of asset or property - whether physical or digital such as laptops, smartphones, automobiles, real estate, etc. from one person to another.
(ii)	Healthcare:	Blockchain provides secure sharing of data in healthcare industry by increasing the privacy, security, and interoperability of the data by eliminating the interference of third party and avoiding the overhead costs.
(iii)	Government:	At the government front, there are instances where the technical decentralization is necessary but politically should be governed by governments like land registration, vehicle registration and management, e-voting etc. Blockchain improves the transparency and provides a better way to monitor and audit the transactions in these systems.
(iv)	Travel Industry:	Blockchain can be applied in money transactions and in storing important documents like passports/other identification cards, reservations and managing travel insurance, loyalty, and rewards thus, changing the working of travel and hospitality industry.
(v)	Economic Forecasts:	Blockchain makes possible the financial and economic forecasts based on decentralized prediction markets, decentralized voting, and stock trading, thus enabling the organizations to plan and shape their businesses.

Risk associated with Blockchain:

(i)	With the use of blockchain, organizations need to consider risks with a wider perspective as different members of a particular blockchain may have different risk appetite/risk tolerances that may further lead to conflict when monitoring controls are designed for a blockchain. There
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	may be questions about who is responsible for managing risks if no one party is in-charge, and how proper accountability is to be achieved in a blockchain.
(ii)	The reliability of financial transactions is dependent on the underlying technology and if this underlying consensus mechanism has been tampered with, it could render the financial information stored in the ledger to be inaccurate and unreliable.
(iii)	In the absence of any central authority to administer and enforce protocol amendments, there could be a challenge in the development and maintenance of process control activities and in such case, users of public blockchains find difficult to obtain an understanding of the general IT controls implemented and the effectiveness of these controls.
(iv)	As blockchain involves humongous data getting updated frequently, risk related to information overload could potentially challenge the level of monitoring required. Furthermore, to find competent people to design and perform effective monitoring controls may again prove to be difficult.

Question-5 (a) Solution:

- IRR = 16% [Where NPV is 0]
- Sensitivity of CC = 60% [i.e. if CC is increased by 60% then NPV will be zero]

Assume, $CC = x$

$$x + (x \times 60\%) = \text{IRR}$$

$$\text{or, } 1.60x = 16\%$$

$$\therefore x = 10\%$$

- Sensitivity of fixed cost = 7.8416% [It means, if fixed cost will increase by 7.8416% then NPV will be zero].
- P/V ratio = 70%; Variable cost ratio = 30%; Variable cost = 60

$$\text{Sale price} = \frac{60}{30\%} = ₹200 \text{ per unit}$$

- Annual cash inflows = 57,500

Requirement:



(i) Initial investment:

$$\text{PV of inflow @RR} = \text{Outflow}$$

$$\text{or, } 57,500 \times \text{PVIFA}(16\%, 5) = \text{Outflow}$$

$$\therefore \text{Outflow} = 57500 \times 3.274 = 1,88,255$$

(ii) NPV:

$$= \text{PV of inflows @CC} - \text{Outflow}$$

$$= 57500 \times \text{PVIFA}(10\%, 5) - 188255$$

$$= (57500 \times 3.791) - 188255 = 29,727.5$$

(iii) Annual fixed cost:

- As other factor remains same in sensitivity analysis, we can say change in fixed cost is equal to change in inflow.

- Assume, inflow = x [Where NPV = 0]

$$\text{NPV} = x \times \text{PVIFA}(10\%, 5) - 188255$$

$$\text{or, } 0 = x \times 3.791 - 188255$$

$$\therefore x = \frac{188255}{3.791} = 49,658$$

$$\text{Inflow where (NPV = 0)} = 49658$$

$$\text{Decrease in inflow} = 57500 - 49658 = 7842$$

$$\text{It must be equal to increase in fixed cost} = 7842$$

$$\text{Given, sensitivity factor} = 7.8416\%$$

$$\therefore \text{Existing FC} \times 7.8416\% = 7842$$

$$\therefore \text{Existing fixed cost} = \frac{7842}{7.8416\%} = 1,00,005$$

(iv) Annual Sales Unit:

$$\text{Contribution} = \text{Inflow} + \text{Fixed cost}$$

$$= 57500 + 100005 = 1,57,505$$

$$\text{Contribution per unit} = \text{Sale price} - \text{VC} = 200 - 60 = ₹140$$

$$\text{No. of units} = \frac{157505}{140} = 1125$$

(v) Break Even Unit:



At BEP, FC = Contribution of BEP unit

or, 1,00,005 = (BEP unit × 140)

$$\therefore \text{BEP unit} = \frac{1,00,005}{140} = 714.32 \text{ (i.e., 715 units)}$$

Question-5 (b) Solution:

(i) Effective annual interest:

0 M
3 M

IP: 97350
RV: 100000

$$3\text{M Interest} = \frac{100000 - 97350}{97350} \times 100 = 2.722\%$$

$$\text{Annual Cost} = 2.722 \times \frac{12}{3} = 10.89\%$$

(ii) Total cost of Fund (annual):

Interest Cost	10.89%
Brokerage $\left(0.125 \times \frac{12}{3}\right)$	0.50%
Rating Charges	0.50%
Stamp Duty $\left(0.125 \times \frac{12}{3}\right)$	0.50%
Total Cost (annual)	12.39%

Question-5 (c) Solution:

STRATEGY	DESCRIPTION
CORPORATE LEVEL STRATEGY	Corporate level strategy fundamentally is concerned with selection of businesses in which a company should compete and also with the development and coordination of that portfolio of businesses.

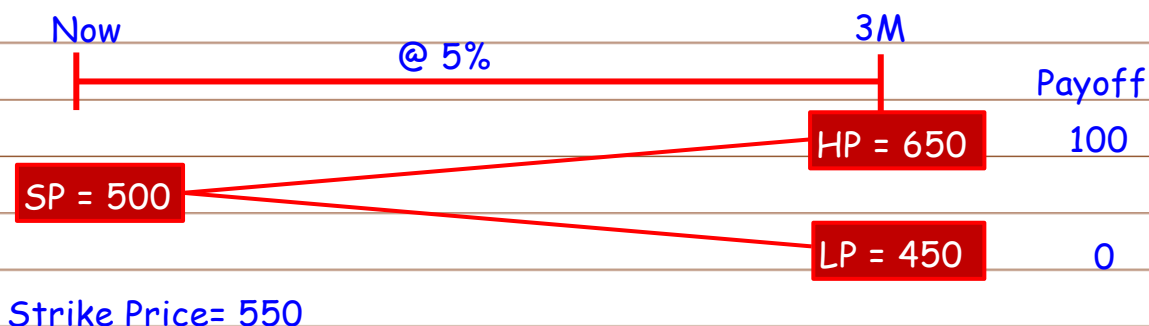


	Corporate level strategy should be able to answer three basic questions: <table border="1"> <tr> <td data-bbox="500 338 756 485">Suitability</td><td data-bbox="756 338 1474 485">Whether the strategy would work for the accomplishment of common objective of the company.</td></tr> <tr> <td data-bbox="500 485 756 632">Feasibility</td><td data-bbox="756 485 1474 632">Determines the kind and number of resources required to formulate and implement the strategy.</td></tr> <tr> <td data-bbox="500 632 756 779">Acceptability</td><td data-bbox="756 632 1474 779">It is concerned with the stakeholders' satisfaction and can be financial and non-financial.</td></tr> </table>	Suitability	Whether the strategy would work for the accomplishment of common objective of the company.	Feasibility	Determines the kind and number of resources required to formulate and implement the strategy.	Acceptability	It is concerned with the stakeholders' satisfaction and can be financial and non-financial.
Suitability	Whether the strategy would work for the accomplishment of common objective of the company.						
Feasibility	Determines the kind and number of resources required to formulate and implement the strategy.						
Acceptability	It is concerned with the stakeholders' satisfaction and can be financial and non-financial.						
BUSINESS UNIT LEVEL STRATEGY	⇒ Strategic business unit may be any profit centre that can be planned independently from the other business units of a corporation. ⇒ At the business unit level, the strategic issues are about practical coordination of operating units and developing and sustaining a competitive advantage for the products and services that are produced.						
FUNCTIONAL OR DEPARTMENTAL LEVEL	⇒ Functional level involves the development and coordination of resources through which business unit level strategies can be executed effectively and efficiently. ⇒ Functional units of an organization are involved in higher level strategies by providing input to the business unit level and corporate level strategy, such as providing information on customer feedback or on resources and capabilities on which the higher-level strategies can be based. ⇒ Once the higher-level strategy is developed, the functional units translate them into discrete action plans that each department or division must accomplish for the strategy to succeed. ⇒ Among the different functional activities viz production, marketing, finance, human resources and research and						



development, finance assumes highest importance during the top down and bottom-up interaction of planning.

Question-6 (a) Solution:



(i) Combination of Share and Option

$$\text{Option Delta (Hedge Ratio)} = \frac{\text{Difference in Payoff}}{\text{Difference in Share price}}$$

$$= \frac{100-0}{650-450} = 0.50$$

Investor has to buy 0.50 share for each call option (i.e. 1 Share for 2 call option).

(ii) Identical Position on expiry

	HP = 650	LP = 450
Value of 0.50 Share	650 X 0.50 = 325	450 X 0.50 = 225
Less: Payoff	-100	-0
Value of Portfolio	225	225

From above calculation it is observed that investor can maintain identical position on expiry if he/she buys 0.50 Share.

(iii) Option Value:

(a) PV of Hedge Portfolio = $\frac{225}{(1+0.05)}$ = 214.29



(b) Amount required to buy 0.50 Share = $500 \times 0.50 = 250$

(c) Value of Call Option = $250 - 214.29 = 35.71$

Alternatively, we may assume interest rate as annual rate. In this case our Answer will differ.

(iv) Return from Option:

- Investment = 35.71

- Expected Payoff at expiry = $100 \times 70\% + 0 = 70$

- Net Profit = $70 - 35.71 = 34.29$

- Return = $\frac{34.29}{35.71} \times 100 = 96.02\%$

Question-6 (b) Solution:

Portfolio Composition

Stock	Investment	Weight	SD (Daily Change)
XYZ	2,00,00,000	$2/4 = 0.50$	1%
ABC	2,00,00,000	$2/4 = 0.50$	1%
	4,00,00,000	1	-

Correlation (XYZ, ABC) = 0.30

We know,

$$\sigma_{\text{port}} = \sqrt{(\sigma_X W_X)^2 + (\sigma_A W_A)^2 + 2(\sigma_X W_X)(\sigma_A W_A)r_{X,A}}$$

$$= \sqrt{(1 \times 0.50)^2 + (1 \times 0.50)^2 + 2 \times 1 \times 0.50 \times 1 \times 0.50 \times 0.30}$$

$$= 0.8062\%$$

SD of Port in (₹) = ₹ 400 Lakh $\times$ 0.8062%

= ₹ 3,2248 Lakh (Daily Change)



SD of Portfolio of 10 days change in (₹)

$$= 3.2248 \times \sqrt{10} = ₹ 10.1977 \text{ Lakh}$$

Z score for 99% confidence level = 2.33 (i.e., Significant Level)

Hence, 10 days 99% VAR

$$= \text{SD of Portfolio of 10 days change} \times Z$$

$$= 10.1977 \times 2.33 = ₹ 23.7606 \text{ Lakh}$$

Second alternative:

To calculate SD of portfolio in 1 (As used by ICAI)

$$\text{SD of portfolio in (1)} = \sqrt{SD_x^2 + SD_A^2 + 2 SD_x SD_A r_{x,A}}$$

$$SD_x = 200,00,000 \times 1\% = 12 \text{ lakh}$$

$$SD_A = 200,00,000 \times 1\% = 12 \text{ lakh}$$

Second alternative:

$$\text{SD of portfolio in (1)} = \sqrt{(2)^2 + (2)^2 + 2 \times 2 \times 2 \times 0.30}$$

$$= \sqrt{10.4} = 3.2249 \text{ lakh (as calculated in first alternative)}$$

Question-6 (c) Solution:

Exotic Options:

- Exotic options represent a distinct class of option contracts that differ in structure and features from traditional vanilla options, such as American and European options.
- Unlike the clear expiration rules of vanilla options (American exercisable at any time, European only at maturity), exotic options often have hybrid characteristics, blending features of both American and European options, creating a middle ground between these two standard types.



TYPES OF EXOTIC OPTIONS

1	Chooser Options	Provides the buyer the right, after a specified period, to decide whether the purchased option is a call or put option. Decision can be made within a specified period prior to the expiration of contracts.
2	Compound Options	Also known as split fee option or 'option on option.' Provides the right or choice (not obligation) to buy another option at a specific price on the expiry of the first maturity date. The underlying is an option, and the payoff depends on the strike price of the second option.
3	Barrier Options	Similar to plain vanilla call and put options, but the unique feature is that the contract becomes activated only if the price of the underlying reaches a certain level during a predetermined period.
4	Binary Options	Also known as 'Digital Option.' Guarantees a pre-decided payoff based on the occurrence of a specific event. Payoff is predetermined, and there is no payoff if the event does not occur.
5	Asian Options	Option contracts with payoffs determined by the average prices of the underlying over a predetermined period during the option's lifetime.
6	Bermuda Option	A compromise between European and American options. Exercise is restricted to certain dates or on expiration, similar to European options.
7	Basket Options	The value of the option depends on the value of a portfolio (basket) rather than a single underlying. Computed based on the weighted average of underlying in the basket.
8	Spread Options	Payoff depends on the difference between the prices of two underlying assets.
9	Look Back Options	Unlike other options with pre-decided exercise prices, the holder has the choice on the maturity date to choose the most favourable strike price based on the minimum and maximum prices of the underlying achieved during the option's lifetime.