The WAY CA test series – SEPT 2025

CA FINAL | **P2 : ADVANCED FINANCIAL MANGEMENT** | **29.10.2025**

[SEMI FINALS]

TIME : 3 HRS | **TOTAL : 100 MARKS**

PART I : MCQ ANSWERS — 30 MARKS

Case Study – 1

1. Option (b)
2. Option (a)
3. Option (d)
4. Option (d)
5. Option (c)

Case Study – 2

6. Option (a)
7. Option (b)
8. Option (d)

Case Study - 3

9. Option (b)
10. Option (a)
11. Option (c)
12. Option (c)
13. Option (c)

Case Study – 4

14. Option (d)
15. Option (c)

PART II : DESCRIPTIVE SOLUTIONS 70 MARKS

Question : 1(a) **6 Marks**

Working Notes:

(i) Decomposition of Funds in Equity and Cash Components

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
NAV on 31.12.14	₹ 70.71	₹ 62.50
% of Equity	99%	96%
Equity element in NAV	₹ 70	₹ 60
Cash element in NAV	₹ 0.71	₹ 2.50

(ii) Calculation of Beta

a) D Mutual Fund Ltd.

Sharpe Ratio =

$$2 = \frac{E(R) - Rf}{\sigma D} = \frac{E(R) - Rf}{11.25}$$

$E(R) – Rf = 22.50$

Treynor Ratio

$$15 = \frac{E(R) - Rf}{\beta D} = \frac{22.50}{\beta D}$$

βD = 22.50/15 = 1.50

b) K Mutual Fund Ltd.

Sharpe Ratio =

$$3.3 = \frac{E(R) - Rf}{\sigma K} = \frac{E(R) - Rf}{5}$$

E(R) – Rf = 16.50

Treynor Ratio =

$$15 = \frac{E(R) - Rf}{\beta K} = \frac{16.50}{\beta K}$$

βK = 16.50/15 = 1.10

(iii) Decrease in the Value of Equity

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Market goes down by	5.00%	5.00%
Beta	1.50	1.10
Equity component goes down	7.50%	5.50%

(iv) Balance of Cash after 1 month

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Cash in Hand on 31.12.14	₹ 0.71	₹ 2.50
Less: Exp. Per month	₹ 0.25	₹ 0.25

Balance after 1 month	₹ 0.46	₹ 2.25

NAV after 1 month

	D Mutual Fund Ltd.	K Mutual Fund Ltd.
Value of Equity after 1 month		
70 x (1 - 0.075)	₹ 64.75	-
60 x (1 - 0.055)	-	₹ 56.70
Cash Balance	0.46	2.25
	65.21	**58.95**

Question : 1(b) **4 Marks**

Projected Balance Sheet

	Year 1	Year 2	Year 3	Year 4
Fixed Assets (40% of Sales)	9,600	11,520	13,824	13,824
Current Assets (20% of Sales)	4,800	5,760	6,912	6,912
Total Assets	**14,400**	**17,280**	**20,736**	**20,736**
Equity	14,400	17,280	20,736	20,736

Projected Cash Flows: -

	Year 1	Year 2	Year 3	Year 4
Sales	24,000	28,800	34,560	34,560
PBT (10% of sale)	2,400	2,880	3,456	3,456
PAT (70%)	1,680	2,016	2,419.20	2,419.20
Depreciation	800	960	1,152	1,382
Addition to Fixed Assets	2,400	2,880	3,456	1,382
Increase in Current Assets	800	960	1,152	-
Operating cash flow (FCFF)	(720)	(864)	(1,036.80)	2,419.20

Projected Cash Flows: -

Present value of Projected Cash Flows:-

Cash Flows	PVF at 15%	PV
-720	0.870	-626.40
-864	0.756	-653.18
-1,036.80	0.658	-682.21
		-1,961.79

Residual Value	=	2419.20 / 0.15 = 16,128
Present value of Residual value	=	16128 / $(1.15)^3$
	=	16128 / 1.521 = 10603.55
Total shareholders' value	=	10,603.55 – 1,961.79 = 8,641.76
Pre strategy value	=	1,400 / 0.15 = 9,333.33
Therefore, Value of strategy	=	8,641.76 – 9,333.33 = – 691.57

Conclusion: The strategy is not financially viable

Question : 1(c) **4 Marks**

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

Outcomes of the financial planning are as follows:

- **Financial objectives:** 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:** It 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.
- **Financial measures:** It includes ratio analysis, analysis of cash flow statement etc. to evaluate the performance of the Company. The selection of these measures again depends upon the corporate objectives.

Question : 2(a) **6 Marks**

(i) Calculation of WACC of each company

	Orange	Grape	Apple
Total debt (`)	80,000	50,000	20,000
Post tax Cost of debt	10.40%	8.45%	9.75%
Equity Fund (`)	20,000	50,000	80,000

WACC

Orange:	(10.4 x 0.8) + (26 x 0.2) =	13.52%
Grape:	(8.45 x 0.5) + (22 x 0.5) =	15.225%
Apple:	(9.75 x 0.2) + (20 x 0.8) =	17.95%

(ii) Economic Valued Added (EVA) of each company

	Orange	Grape	Apple
WACC	13.52	15.225	17.95
EBIT (1-T) (A)	16,250	16,250	16,250
WACC x Invested Capital (B)	13,520	15,225	17,950
EVA [(A) – (B)]	2,730	1,025	-1,700

Orange would be considered as the best investment since the EVA of the company is highest and its weighted average cost of capital is the lowest.

(iii) No. of shares issued by each company

	Orange	Grape	Apple
EBIT (`)	25,000	25,000	25,000
Interest (`)	12,800	6,500	3,000
Taxable Income (`)	12,200	18,500	22,000
Tax 35% (`)	4,270	6,475	7,700
Net Income (`)	7,930	12,025	14,300
Stock Price (EPS x PE Ratio) (`)	14.30	15.95	15.73
No. of shares	(7930x11)/ 14.30	(12025x11)/1 5.95	(14300x11)/1 5.73
	= 6100	= 8293	= 10000

(iv) Since the three entities have different capital structures, they would be exposed to different degrees of financial risk. The PE ratio should therefore be adjusted for the risk factor.

(v) Market Capitalisation

	Orange	Grape	Apple
Estimated Stock Price (`)	14.30	15.95	15.73
No. of shares	6,100	8,293	10,000
Estimated Market Cap (`)	87,230	1,32,273.35	1,57,300

Question : 2(b) **4 Marks**

The co-efficient of determination (r2) i.e. square of Coefficient of Correlation gives the percentage of the variation in the security's return that is explained by the variation of the market index return. In the X company stock return, 18 per cent of variation is explained by the variation of the index and 82 per cent is not explained by the index.

According to Sharpe, the variance explained by the index is the systematic risk. The unexplained variance or the residual variance is the unsystematic risk.

Company X:

Systematic risk = $\beta_i^2 \times$ Variance of market index

= $(0.71)^2 \times 2.25 = 1.134$

Unsystematic risk($\in_i^2$) = Total variance of security return - Systematic Risk

= 6.30 – 1.134

= 5.166

or

= Variance of Security Return $(1-r^2)$

= 6.30 X (1-0.18) = 6.3 X 0.82 = 5.166

Total risk = $\beta_i^2 \times \sigma_m^2 + \in_i^2$

= Systematic Risk + Unsystematic Risk

= 1.134 + 5.166 = 6.30

Company Y:

Systematic risk = $\beta_i^2 \times \sigma_m^2$

= $(0.685)^2 \times 2.25 = 1.056$

Unsystematic risk = Total variance of the security return - systematic risk.

= 5.86-1.056 = 4.804

Portfolio Risk

$$\sigma_p^2 = \left[\left(\sum_{i=1}^{N} X_i \beta_i\right)^2 \sigma_m^2\right] + \left[\left(\sum_{i=1}^{N} X_i^2 \in_i^2\right)\right]$$

= $[(0.5 \times 0.71 + 0.5 \times 0.685)^2\ 2.25] + [(0.5)^2(5.166)+(0.5)^2(4.804)]$

= $[(0.355 + 0.3425)^2\ 2.25] + [(1.292 + 1.201)]$

= 1.0946 + 2.493 = 3.5876

Question : 2(c) **4 Marks**

To decide in which bond Mr. Z should invest, we shall compute duration of each bond as follows:

Duration of Bond X

Year	Cash flow	P.V. @ 12%		Proportion of bond value	Proportion of bond value x time (years)
1	1,080	0.893	964.44	1.000	1.000

Duration of the Bond is 1 year.

Duration of Bond Y

Year	Cash flow	P.V. @ 12%		Proportion of bond value	Proportion of bond value x time (years)
1	90	0.893	80.37	0.089	0.089
2	90	0.797	71.73	0.079	0.158
3	90	0.712	64.08	0.070	0.210
4	1,090	0.636	693.24	0.762	3.048
			909.42	1.000	3.505

Thus, duration of the Bond is 3.505 years.

Alternatively, it can also be computed as follows:

Year	Cash Flow	PVF @12%	Present Value (PV)	Year × PV
1	90	0.893	80.37	80.37
2	90	0.797	71.73	143.46

3	90	0.712	64.08	192.24
4	1090	0.636	693.24	2772.96
			909.42	3189.03

$$\text{Duration} = \frac{3189.03}{909.42} = 3.507$$

Let x1 be the investment in Bond X and therefore investment in Bond Y shall be (1 - x1). Since the required duration is 2 years the proportion of investment in each of these two securities shall be computed as follows:

2 = x1 + (1 - x1) 3.505 or 2 = x1 + (1 - x1) 3.507

x1 = 0.60

Accordingly, the proportion of investment shall be 60% in Bond X and 40% in Bond Y respectively.

Amount of investment

Bond X	Bond Y
PV of `18,00,000 for 2 years @ 12% x 60% = `18,00,000 (0.797) x 60% = `8,60,760 No. of Bonds to be purchased = `8,60,760 /` 964.44 = 892.50 i.e. Thus, 893 bonds	PV of `18,00,000 for 2 years @ 12% x 40% = `18,00,000 (0.797) x 40% = `5,73,840 No. of Bonds to be purchased = `5,73,840 /`909.42 = 631 i.e. Thus, 631 bonds

Note:

i. 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.

ii. Further, in the above computation, Modified Duration can also be used instead of Duration.

Question : 3(a) **6 Marks**

$$\text{No. of Shares} = \frac{\text{Rs 1300 Cr}}{\text{Rs 40}} = 32.50 \text{ Cr}$$

$$\text{EPS} = \frac{\text{PAT}}{\text{No. of Shares}}$$

$$\text{EPS} = \frac{\text{Rs 290 Cr}}{\text{Rs 32.50 Cr}} = 8.92$$

Calculation of value per share using Free Cash Flow to Equity as basis: FCFE =

Net income – [(1-b) (capex – dep) + (1-b) (ΔWC)]

FCFE = 8.92 – [(1-0.27) (47-39) + (1-0.27) (3.45)]

= 8.92 – [5.84 + 2.52] = ` 0.564

Cost of Equity (Ke)= Rf + ß (Rm – Rf)

= 8.7 + 0.1 (10.3 – 8.7) = 8.86%

$$Po = \frac{FCFE(1+g)}{Ke - g} = \frac{0.56(1.08)}{0.0886 - 0.08} = \frac{0.6048}{0.0086} = 70.33$$

Calculation of value per share using dividend discount model:

$$Po = \frac{D0(1+g)}{Ke - g} = \frac{2(1.08)}{0.0886 - 0.08} = \frac{2.16}{0.0086} = 251.16$$

From the above we can see that value per share on the basis of dividend discount model is more than the value per share on the basis of free cash flow to equity model.

In the dividend discount model, the analyst considers the stream of expected dividends to value the company's stock. It is assumed that the company follows a consistent dividend payout ratio which can be less than the actual cash available with the firm.

A stock's intrinsic value based on the dividend discount model may not represent the fair value for the shareholders because dividends are distributed in the form of cash from profits. In case the company is maintaining healthy cash in its balance sheet then it means that dividend pay-out is low which could result in undervaluation of the stock.

In the case of free cash flow to equity model a stock is valued on the cash flow available for distribution after all the reinvestment needs of capex and incremental

working capital are met. Thus, using the free cash flow to equity model provides a better measure for valuations in comparison to the dividend discount model.

Thus, the view of Mr. Amit that dividend discount model represents the fair value is incorrect. The share is not under-valued rather it is overvalued if we take "free cash flow to equity model" into consideration.

Question : 3(b) **4 Marks**

Existing No. of Equity Shares = ₹ 1500 crore / ₹ 1500 = 1 Crore

No. of shares to be bought back = 1 Crore x 0.20 = 20 Lakh

Price at which share to be bought back = Rs. 1,500 + 10% of Rs. 1,500 = Rs. 1,650

Amount required for Buyback of Shares = Rs. 1,650 x 20 Lakh = Rs. 330 Crore

Amount of Loan @ 16% = Rs. 330 Crore

Statement showing Post Buyback EPS

Profit before tax (Rs. 200 crore / 0.70)	Rs. 285.7143 crore
Less: Interest on Loan (Rs. 330 Crore x 16%)	Rs. 52.8000 crore
Profit before Tax	Rs. 232.9143 crore
Tax	Rs. 69.8743 crore
Profit after Tax (PAT)	Rs. 163.0400 crore
No. of Shares Post buyback	80 Lakh
EPS (Post Buyback) (Rs. 163.0400 Crore / 80.00 Lakh)	Rs. 203.80

Question : 3(c) **4 Marks**

CFO's traditional role focused on wealth maximization for shareholders, but due to globalization, information and communication growth, and pandemics, their responsibilities have expanded due to complexity and changing expectations.

CFOs now support strategic and operational decision-making in addition to governance, compliance, and business ethics.

In post-pandemic time their role has been advanced in the following areas in addition to traditional role:

- **Risk Management:** Now a days the CFOs are expected to look after the overall functioning of the framework of Risk Management system of an organisation.
- **Supply Chain:** Post pandemic supply chain management system has been posing the challenge for the company to maintain the sustainable growth. Since CFOs are care takers of finance of the company, considering the financial viability of the Supply Chain Management their role has now become more critical.
- **Mergers, acquisitions, and Corporate Restructuring:** Recent growth and market share acquisitions have increased the importance of CFOs' role in strategic decisions, as errors can lead to business collapse.
- **Environmental, Social and Governance (ESG) Financing:** With the evolving concept of ESG, CFO role has been shifted from traditional financing to sustainability financing.

Thus, from above discussion it can be concluded that in today's time CFOs are taking a leadership role in Value Creation for the organisation and that too on sustainable basis for a longer period.

Question : 4(a) **6 Marks**

(a) Stock's return

Small cap growth = 5.80 + 0.65 × 8.85 + 1.95 × (-4.25) + 1.65 × 0.80 = 4.585

Small cap value = 5.80 + 1.25 × 8.85 + 2.23 × (-4.25) + 2.15 × 0.80 = 9.105

Large cap growth = 5.80 + 2.25 × 8.85 + 3.2 × (-4.25) + 8.65 × 0.80 =19.033

Large cap value = 5.80 + 1.325 × 8.85 + 2.25 × (-4.25) + 9.50 × 0.80 =15.564

Expected return on market index

0.15 x 4.585 + 0.20 x 9.105 + 0.15 x 19.033 + 0.50 x 15.564 = 13.145%

Alternatively, it can also be calculated as follows: -

= 5.80 + [0.65 × 0.15 + 1.25 × 0.2 + 2.25 × 0.15 + 1.325 × 0.5] x

8.85 + [1.95 × 0.15 + 2.23 × 0.2 + 3.2 × 0.15 + 2.25 × 0.5] x

(-4.25) + [1.65 × 0.15+2.15 × 0.2+8.65 × 0.15 + 9.5 × 0.5] x 0.8

= 5.80 + 11.925 + (-9.960) + 5.38 = 13.145%

(b) Using CAPM,

Small cap growth = 5.80 + 0.65 × 8.85 = 11.553%

Small cap value = 5.80 + 1.25 × 8.85 = 16.863%

Large cap growth = 5.80 + 2.25 × 8.85 = 25.713%

Large cap value = 5.80 + 1.325 × 8.85 = 17.526%

Expected return on market index

= 0.15 x 11.553 + 0.20 x 16.863 + 0.15 x 25.713 + 0.50 x 17.526 = 17.726%

(c) Let us assume that Mr. Hari will invest X1% in small cap value stock and X2% in large cap growth stock

X1 + X2 = 1

0.65 X1 + 1.325 X2 = 1

0.65 X1 + 1.325(1 – X1) = 1

0.65 X1 + 1.325–1.325 X1 = 1

0.325 = 0.675 X1

0.325/0.675 = X1

Hence, 0.481 = X1 & X2 = 0.519

Accordingly, 48.10% of fund should be invested in small cap growth category of stocks and balance 51.90% of funds should be invested in large cap value stocks.

Question : 4(b) **4 Marks**

P.V. of dividend stream and sales proceeds

Year	Divd. /Sale	PVF (12%)	PV (₹)
1	₹ 20/-	0.893	17.86
2	₹ 20/-	0.797	15.94
3	₹ 20/-	0.712	14.24
4	₹ 24/-	0.636	15.26
5	₹ 24/	0.567	13.61
6	₹ 24/	0.507	12.17
7	₹ 24/	0.452	10.85
7	₹ 1026/- (₹ 900 x 1.2 x 0.95)	0.452	463.75
			₹ 563.68
	Less : - Cost of Share (₹ 500 x 1.05)		₹ 525.00
	Net gain		₹ 38.68

Since Mr. A is gaining ₹ 38.68 per share, he should buy the share.

Maximum price Mr. A should be ready to pay is ₹ 563.68 which will include incidental expenses. So the maximum price should be ₹ 563.68 x 100/105 = ₹ 536.84

Question : 4(c) **4 Marks**

EITHER

(1) ImpactofFinancial Restructuring

Particulars	**₹ in Lac**
Benefits to PK Ltd.	
1. Reduction in Equity Share capital (90×8)	720
2. Reduction in Preference Share Capital (3×50)	150
3. Waiver of Trade payables (400 @ 40%)	160
(A) Total (1+2+3)	1030
Amount of ₹ 1030 Lacs utilised to write off losses & overvalued assets	

1. Losses	500
2. Over valued Non Current Assets (1000-500)	500
(B) Total (1+2)	1000
Amount unutilized transfer to Capital Reserve (A-B)	30

(2) Balance Sheet of PK Ltd. as on 31.03.2015 (after reconstruction)

Particulars	₹ in Lac
I. EQUITY & LIABILITIES	
Shareholder's Fund	
Equity Share Capital (₹ 2 each)	700.00
8% Preference Share Capital (₹ 50 each)	150.00
Reserves & Surplus (Capital Reserve)	30.00
Current Liabilities	
Trade Payable	120.00
Total (I)	1000.00
II. ASSETS	
Non-Current Asset	500.00
Current Assets	
Inventory	300.00
Trade Receivables	100.00
Cash & Bank balance	100.00
Total (II)	1000.00

Calculation of Equity Share Capital

1. Equity share capital after reconstruction	180.00
2. Issued in Cash (200×2)	400.00
3. Issued to Trade payables [50% of (60% of ₹ 400 Lacs)]	120.00
Total (1+2+3)	700.00

OR

Tracking error

Can be defined as the divergence or deviation of a fund's return from the benchmarks return it is following.

The passive fund managers closely follow or track the benchmark index. Although they design their investment strategy on the same index but often it may not exactly replicate the index return. In such situation, there is possibility of deviation between the returns.

The tracking error can be calculated on the basis of corresponding benchmark return vis a vis quarterly or monthly average NAVs.

Reasons of Tracking Error:

Higher the tracking error higher is the risk profile of the fund. Whether the fun outperform or underperform their benchmark indices; it clearly indicates that fund managers are not following the benchmark indices properly. In addition to the same other reasons for tracking error are as follows:

- Transaction cost
- Fees charged by AMCs
- Fund expenses
- Cash holdings
- Sampling biasness

Thus, from above it can be said that to replicate the return to any benchmark index the tracking error should be near to zero.

The Tracking Error is calculated as follows:

$$TE = \sqrt{\frac{\sum (d - \bar{d})^2}{n-1}}$$

d = Differential return

$\bar{d}$ = Average differential return

n = No. of observation

Question : 5 (a) **7 Marks**

Earnings of Mr. A through stock lending scheme

		Scenario 1	Scenario 2
(i)	Lending fee		
	31-01-20 1020 x 1% and 980 x 1%	10.20	9.80
	29-02-20 1040 x 1% and 960 x 1%	10.40	9.60
	31-03-20 1050 x 1% and 940 x 1%	10.50	9.40
	Earnings from lending per Share (A)	31.10	28.80
	Total No. of Shares	10000	10000
	Total Earning from Lending	3,11,000	2,88,000
(ii)	Dividend income per Share (B)	25.00	25.00
	Total earnings per share (A) + (B)	56.10	53.80
	Total No. of Shares	10000	10000
(iii)	Total Earning	5,61,000	5,38,000
	Gain on shortening the shares		
	(1,050 - 1,000) and (1,000 - 940)	(50.00)	60.00
	Lending fees paid per share	(31.10)	(28.80)
	Bank guarantee charges @ 8% p.a.	(20.00)	(20.00)
	Gain Per Share	(101.10)	11.20
	Total No. of Shares	10000	10000

	Total Gain on shortening the shares	(10,11,000)	1,12,000

Question : 5 (b) **7 Marks**

a) Swap Ratio

Gross NPA	5 :40 i.e.	5 / 40 x 30% =	0.0375
CAR	4 :16 i.e.	4 / 16 x 20% =	0.0500
Market Price	8 :128 i.e.	8 / 128 x 40% =	0.025
Book Value Per Share	15 :120 i.e.	15 / 120 x 10% =	0.0125
			0.125

Thus, for every 1 share of Bank 'R' 0.125 share of Bank 'P' shall be issued.

b) No. of equity shares to be issued:

(Rs 140Lakhs x Rs 10)/0.125 = 1.75 Lakh shares

c) Balance Sheet after Merger

Calculation of Capital Reserve

Book Value of Shares	₹ 210.00 lac
Less: Value of Shares issued	₹ 17.50 lac
Capital Reserve	**₹ 192.50 lac**

Balance Sheet

	₹ lac		₹ lac
Paid up Share Capital	517.50	Cash in Hand & RBI	2900.00
Reserves & Surplus	5500.00	Balance with other banks	2000.00
Capital Reserve	192.50	Investment	16100.00

Deposits	44000.00	Advances	30500.00
Other Liabilities	3390.00	Other Assets	2100.00
	53600.00		**53600.00**

d) Calculation CAR & Gross NPA % of Bank 'P' after merger

CAR/CRWAR = Total capital/Risky Weighted Assests

	Bank 'R'	Bank 'P'	Merged
CAR (Given)	4%	16%	
Total Capital	₹ 210 lac	₹ 6000 lac	₹ 6210 lac
Risky Weighted Assets	₹ 5250 lac	₹ 37500 lac	₹ 42750 lac

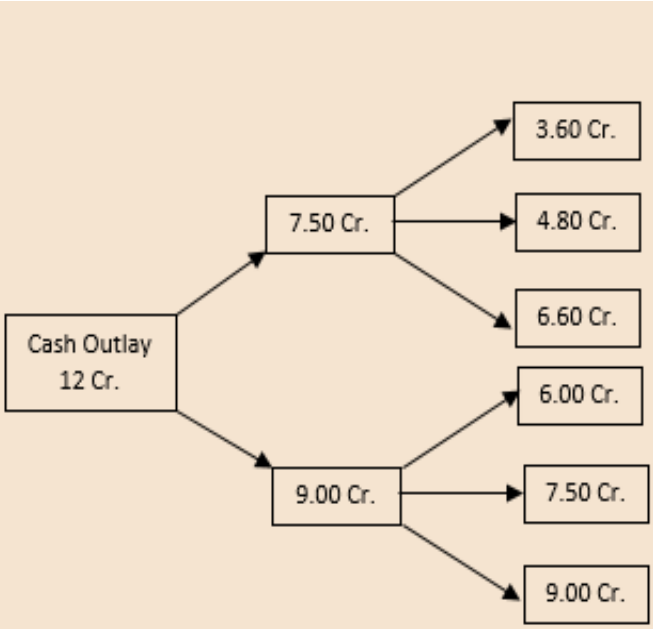
CAR = Rs 6,210 Lakhs / Rs 42,750 Lakhs = 14.53%

GNPA Ratio = (Gross NPA / Advances) x 100

	Bank 'R'	Bank 'P'	Merged
GNPA (Given)	0.40	0.05	
	$0.40 = \frac{GNPA_R}{₹\ 3500\ lac}$	$0.40 = \frac{GNPA_S}{₹\ 27000\ lac}$	
Gross NPA	₹ 1400 lac	₹ 1350 lac	₹ 2750 lac

Question : 6 (a) **7 Marks**

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



Path No.	Joint Probability Year 1 × Year 2
1	0.07
2	0.35
3	0.28
4	0.15
5	0.09
6	0.06
	1.00

(ii) The Net Present Value (NPV) of each path at 15% discount rate is given below:

(` in crore)

Path	Year 1 Cash Flows (`)	Year 2 Cash Flows (`)	Total Cash Inflows (PV) (`)	Cash Outflows (`)	NPV (`)
1.	7.50 x 0.870 = 6.53	3.60 x 0.756 = 2.72	9.25	(12)	(-) 2.75
2.	6.53	4.80 x 0.756 = 3.63	10.16	(12)	(-) 1.84
3.	6.53	6.60 x 0.756 = 4.99	11.52	(12)	(-)0.48
4.	9.00 x 0.870 = 7.83	6.00 x 0.756 = 4.54	12.37	(12)	0.37
5.	7.83	7.50 x 0.756 = 5.67	13.50	(12)	1.50
6.	7.83	9.00 x 0.756 = 6.80	14.63	(12)	2.63

Statement showing Expected Net Present Value

(` in crore)

Path	NPV (`)	Joint Probability	Expected NPV (`)
1	(-) 2.75	0.07	(-) 0.19
2	(-) 1.84	0.35	(-) 0.64
3	(-) 0.48	0.28	(-) 0.13
4	0.37	0.15	0.06
5	1.50	0.09	0.14
6	2.63	0.06	0.16
			(-) 0.60

(iii) The best outcome will be path 6 when the NPV is at ` 2.63 crore. The probability of occurrence of this NPV is 6% and hence expected NPV of ` 0.16 crore

(iv) f the worst outcome is realized the project will yield NPV of Negative ` 2.75 crore. The probability of occurrence of this NPV is 7% and hence Negative NPV of ` 0.19 crore (path 1).

(v) The project should not be accepted because the expected NPV is negative ` 0.60 crore based on joint probability.

Question : 6 (b) **7 Marks**

(i)

Probability	ABC (%)	XYZ (%)	1X2 (%)	1X3 (%)

(1)	(2)	(3)	(4)	(5)
0.20	12	16	2.40	3.20
0.25	14	10	3.50	2.50
0.25	-7	28	-1.75	7.00
0.30	28	-2	8.40	-0.60
Average return			12.55	12.10

Hence the expected return from ABC = 12.55% and XYZ is 12.10%

Probability	**(ABC-$\overline{ABC}$)**	**(ABC-$\overline{ABC}$)^2**	**1X3**	**(XYZ-$\overline{XYZ}$)**	**(XYZ-$\overline{XYZ}$)^2**	**(1)X(6)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	
0.20	-0.55	0.3025	0.06	3.9	15.21	3.04
0.25	1.45	2.1025	0.53	-2.1	4.41	1.10
0.25	-19.55	382.2025	95.55	15.9	252.81	63.20
0.30	15.45	238.7025	71.61	-14.1	198.81	59.64
			167.75			126.98

$\sigma^2_{ABC} = 167.75(\%)^2$; $\sigma_{ABC} = 12.95\%$

$\sigma^2_{XYZ} = 126.98(\%)^2$; $\sigma_{XYZ} = 11.27\%$

(ii) In order to find risk of portfolio of two shares, the covariance between the two is necessary here.

Probability	**(ABC-$\overline{ABC}$)**	**(XYZ-$\overline{XYZ}$)**	**2X3**	**1X4**
(1)	(2)	(3)	(4)	(5)
0.20	-0.55	3.9	-2.145	-0.43
0.25	1.45	-2.1	-3.045	-0.76
0.25	-19.55	15.9	-310.845	-77.71
0.30	15.45	-14.1	-217.845	-65.35
				-144.25

$\sigma^2_P = (0.5^2 \times 167.75) + (0.5^2 \times 126.98) + 2 \times (-144.25) \times 0.5 \times 0.5$

$\sigma^2_P = 41.9375 + 31.745 - 72.125$

$\sigma^2_P = 1.5575$ or 1.56(%)

$\sigma_P = \sqrt{1.56} = 1.25\%$

$E(R_p) = (0.5 \times 12.55) + (0.5 \times 12.10) = 12.325\%$

Hence, the return is 12.325% with the risk of 1.25% for the portfolio. Thus, the portfolio results in the reduction of risk by the combination of two shares.

(iii) For constructing the minimum risk portfolio, the condition to be satisfied is

$$X_{ABC} = \frac{\sigma_X^2 - r_{AX}\sigma_A\sigma_X}{\sigma_A^2 + \sigma_X^2 - 2r_{AX}\sigma_A\sigma_X} \text{ or } = \frac{\sigma_X^2 - Cov._{AX}}{\sigma_A^2 + \sigma_X^2 - 2Cov._{AX}}$$

σ_X = Std. Deviation of XYZ

σ_A = Std. Deviation of ABC

r_{AX}= Coefficient of Correlation between XYZ and ABC

$Cov._{AX}$ = Covariance between XYZ and ABC.

Therefore,

$$\% \text{ ABC} = \frac{126.98-(-144.25)}{126.98+167.75-[2\times(-144.25)]} = \frac{271.23}{583.23} = 0.4650 \text{ or } 46.50\%$$

% ABC = 46.50%,

% XYZ = (1 – 0.4650) = 0.5350 = 53.50%

CA FINAL **P2 : ADVANCED FINANCIAL MANGEMENT** **29.10.2025**

[SEMI FINALS]

TIME : 3 HRS **TOTAL : 100 MARKS**

ALL THE BEST

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