SUGGESTED ANSWERS

PART A : MCQ 10 MARKS

Case Scenario Solution

Yield for 9 months = 115%

Market value of Investments as on 31.03.2013 = 1,00,000 + (1,00,000 × 115%) = ₹2,15,000/-

Therefore, **NAV as on 31.03.2013 = (2,15,000 -10,000)/10,000 = ₹20.50**

(NAV would stand reduced to the extent of dividend payout, being (₹100,000 × 10%) = ₹10,000)

Since dividend was reinvested by Mr. X,

additional units acquired = ₹10,000 / ₹20.50 = 487.80 units

Therefore, units as on 31.03.2013 = 10,000+ 487.80 = 10,487.80

[Alternately, units as on 31.03.2013 = (2,15,000/20.50) = 10,487.80

Dividend as on 31.03.2014 = 10,487.80 × 10 × 0.2 = ₹20,975.60

Let X be the NAV on 31.03.2014, then number of new units reinvested will be ₹20,975.60/X. Accordingly 11296.11 units shall consist of reinvested units and 10487.80 (as on 31.03.2013). Thus, by way of equation it can be shown as follows:

11296.11 = (20975.60 / X) + 10487.80

Therefore, **NAV as on 31.03.2014 = 20,975.60/(11,296.11- 10,487.80) = ₹25.95**

NAV as on 31.03.2015 = ₹1,00,000 (1+2.0217)/11296.11 = ₹26.75

Question : 1 **2 Marks**

c) Rs. 20.50

Question : 2 **2 Marks**

a) Rs. 25.95

Question : 3 **2 Marks**

b) Rs. 26.75

Case Scenario Solution

2 Marks

Question : 4

a) Rs. 700 Lakhs

Question : 5

b) Rs. 17

Question : 6 Solution **2 Marks**

a) 41.57

Calculation of NAV per unit of Scheme Rudolf

Step 1: Calculate Total Market Value of Investments

Total Market Value = (No. of Shares × Market Price Per Share)

Company	No. of Shares	Market Price (₹)	Total Market Value (₹)
Nairobi Ltd.	25,000	20	5,00,000
Dakar Ltd.	35,000	300	1,05,00,000
Senegal Ltd.	29,000	380	1,10,20,000
Cairo Ltd.	40,000	500	2,00,00,000

Total Market Value of Investments

= 5,00,000 + 1,05,00,000 + 1,10,20,000 + 2,00,00,000 = ₹4,20,20,000

Step 2: Calculate Net Assets

Net Assets = Total Market Value of Investments - Total Liabilities

= 4,20,20,000 - (2,50,000 + 2,00,000) = ₹4,15,70,000

Step 3: Calculate NAV per Unit

NAV per Unit = Net Assets / Total Units

= 4,15,70,000 / 10,00,000 = ₹41.57

PART B : DESCRIPTIVE 50 MARKS

Question : 1 Solution **10 Marks**

(i) Computation of Premium (Net Worth Formula):

	Amount in ₹ Crores
Total Assets (Fixed assets + Current Assets) = (550 + 580)	1130
Less: Liabilities (Current Liabilities + Borrowings) = (240 + 105)	345
Net Assets Value	785
Current Value of Land after growing for three years @ 30% = 190 × 2.197	417.43
Less: Book Value	190.00
Increase in the Value of land	227.43
Adjusted NAV (785 + 227.43)	1012.43
Current Profit after Tax (@15 % for 5 years i.e. 250 × 7.7537	1938.43
Average Profit for 1 year = 1938.43/5	387.69
Total Value of Firm (1012.43 + 387.69)	1400.12
Total Market Value = No of shares × MPS = 12.50 × 75	937.50
Premium (Total Value – Market Value)	462.62
Premium (%) = 462.62/937.50 * 100	49.35%

(ii) Computation of Premium (Dividend Growth Formula):

Existing Growth Rate	0.15
DPS = 125/12.50	10
MPS	75
Cost of Equity (D1/MP + g) = [(10 × 1.15/75) + 0.15]	0.3033
Expected growth rate after merger	0.18
Expected Market Price = 10 × [1.18 / (0.3033 - 0.18)]	95.70
Premium over current market price (95.70 - 75)/ 75 × 100	27.60%

Alternatively, if given figure of dividend is considered as D1 then Premium over Current Market Price shall be computed as follows:

Cost of Equity $\left(\frac{D_1}{P}+g\right)$	$\left(\frac{10}{75}+0.15\right)$	0.2833
Expected Growth Rate after Merger		0.18
Expected Market Price 10.00 / (0.2833 – 0.18)		96.81
Premium over Current Market Price (96.81 - 75)/ 75 × 100		**29.08%**

(iii) During the course of negotiations, ICL will push forward valuation based on Growth Rate Method as it will lead to least cash outflow.

Question : 2 Solution **6 Marks**

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

Value of Firm = $V_0 = FCFF_1 / K_c – g_n$

Where- $FCFF_1$ = Expected FCFF in the year 1

K_c = Cost of capital

g_n = Growth rate forever

Thus, ₹500 lakhs = ₹20 lakhs / (Kc-g)

Since g = 5%, then Kc = 9%

Now, let X be the weight of debt and given cost of equity = 12% and cost of debt = 6%,

then 12% (1 – X) + 6% X = 9%

Hence, X = 0.50, so book value weight for debt was 50%

Correct weight should be 150% of equity and 50% of debt.

Cost of capital = Kc = 12% (0.75)+6% (0.25) = 10.50% and

correct firm's value = ₹20 lakhs/ (0.105 – 0.05) = ₹363.64 lakhs.

Question : 3 Solution **5 Marks**

(i) Taxable income = Net Income / (1 – 0.40)

= ₹15,00,000/ (1 – 0.40) = ₹25,00,000.

Again, taxable income = EBIT – Interest

or, EBIT = Taxable Income + Interest = ₹25,00,000 + ₹15,00,000 = ₹40,00,000

(ii) EVA = EBIT (1 – T) – (WACC × Invested capital)

= ₹40,00,000(1–0.40) – (0.126 × 1,00,00,000) = ₹24,00,000 – ₹12,60,000 = ₹11,40,000

(iii) EVA Dividend = ₹11,40,000/2,50,000 = ₹4.56

If Delta Ltd. does not pay a dividend, we would expect the value of the firm to increase because it will achieve higher growth, hence a higher level of EBIT. If EBIT is higher, then all else equal, the value of the firm will increase.

Question : 4 Solution **6 Marks**

Business Segment	Capital-to-Sales	Segment Sales	Theoretical Values
Wholesale	(1/1.18) 0.85	€225,000	€191250
Retail	(1/0.83) 1.2	€720,000	€864000
General	(1/1.25) 0.8	€ 2,500,000	€2000000
		Total Value	**€3055250**

Business Segment	Capital-to-Assets	Segment Assets	Theoretical Values
Wholesale	(1.43) 0.7	€6,00,000	€420000
Retail	(1.43) 0.7	€5,00,000	€3,50,000
General	(1.43) 0.7	€40,00,000	€2800000
		Total Value	**€3,57,0000**

Business Segment	Capital-to-Operating Income	Operating Income	Theoretical Values
Wholesale	(1/0.11) 9	€75,000	€6,57,000
Retail	(1/0.125) 8	€1,50,000	€1200000
General	(1/0.25) 4	€7,00,000	€2800000
		Total Value	**€4675000**

Average theoretical value = (3055250+3570000+4675000) / 3

Average theoretical value of Cranberry Ltd. = € 3766750

Question : 5 Solution **8 Marks**

(i) Calculation of Income Available for Distribution

Description	Units (Lakh)	Per Unit (₹)	Total (₹ In lakh)
Income from January	300	0.0800	24.0000
Add: Dividend equalization collected on issue	5	0.0800	0.4000
	305	0.0800	24.4000
Add: Income from February		0.1180	36.0000
	305	0.1980	60.4000
Less: Dividend equalization paid on repurchase	2.50	0.1980	(0.4950)
	302.50	0.1980	59.9050
Add: Income from March		0.1554	47.0000
	302.50	0.3534	106.9050
Less: Dividend Paid		0.2474	(74.8335)
	302.50	0.1060	32.0715

(ii) Calculation of Issue Price at the end of January

Description	₹
Opening NAV	20.250
Add: Entry Load 2% of ₹20.25	0.405
	20.655
Add: Dividend Equalization collected on Issue Price	0.080
	20.735

(iii) Calculation of Repurchase Price at the end of February

Description	₹
Opening NAV	20.250
Less: Exit Load 2% of ₹20.250	(0.405)
	19.845
Add: Dividend Equalization paid on Issue Price	0.198
	20.043

(iv) Closing NAV at the end of March

Description		₹ (lakh)
Opening Net Asset Value (₹20.25 × 300)		6075.000
Portfolio Value Appreciation		460.000
Issue of Fresh Units (5 × 20.735)		103.675
Income Received (24 + 36 + 47)		107.000
Less: Units repurchased (2.5 × 20.043)	(50.1075)	6745.675
Income Distributed	(74.8335)	(124.941)
Closing Net Asset Value		6620.734
Closing Units (300 + 5 – 2.5) lakh		302.50 lakh
Closing NAV as on 31st March		₹21.8867

Question : 6 Solution **5 Marks**

Particulars	Amount
(a) Amount invested by Mr. Optimistic as on 01/04/2016	₹15,00,000
(b) Gain during 5 years (15,00,000 × 17.5% × 5 years)	₹13,12,500
(c) Value of investment as on 31/03/2021 (a + b)	₹28,12,500
(d) NAV as on 31/03/2021	₹100 per Unit
(e) Total number of units as on 31/03/2021 (c/d)	28,125 Units
Total units before second bonus = 28,125 × 4/5	22,500 Units
Total units before first bonus = 22,500 × 5/6	18,750 Units
NAV as on 01/04/2016 = 15,00,000 / 18,750	₹80 per Unit

Question : 7 Solution **6 Marks**

(i) Calculation of NAV of the Fund

			Crore ₹
	Value of Shares		
	a. Pharmaceutical Companies	$79 \times \frac{465}{260}$	141.288
	b. Construction Companies	$31 \times \frac{450}{210}$	66.429
	c. Service Sector Companies	$56 \times \frac{480}{275}$	97.745
	d. IT Companies	$34 \times \frac{495}{240}$	70.125
	e. Pharmaceutical Companies	$10 \times \frac{410}{255}$	16.078

	Investment in Bonds		
	a. Listed Bonds	$\frac{14}{8.842} \times 12$	19.00
	b. Unlisted Bonds		7.000
	Cash and Cash Equivalents		1.50
			419.165
	Less: Expense Payable		3.500
	NAV of the Fund		415.665

(ii) NAV of the Fund Per Unit

NAV of the Fund	₹415.665 crore
Number of Units	4.20 crore
NAV Per Unit (₹415.665 crore/ 4.20 crore)	₹98.97

(iii) Net Return

Initial Cost Per Unit		
Investment in Shares	₹210 crore	
Bonds	₹19 crore	₹229 crore
Number of Units		4.20 crore
Cost Per Unit		₹54.52
Return		

Capital Gain	(₹98.97 – ₹54.52)	₹44.45
Dividend	₹3 × 2	₹6.00
		₹50.45
Annualised Return	$\frac{50.45}{54.52} \times \frac{1}{2}$	46.27%

(iv) Expense Ratio

$$= \frac{\text{Expense per unit}}{\text{NAV per unit}} \times 100 = \frac{\frac{480+150+38}{420}}{98.97} \times 100 = \frac{1.5950}{98.97} \times 100 = 1.607\%$$

Question : 8 Solution **4 Marks**

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 funds 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

CA FINAL **P2: ADVANCED FINANCIAL MANAGEMENT** **30.01.2025**

[SYLLABUS : MUTUAL FUNDS, BUSINESS VALUATION]

TIME : 1 HR 45 MIN **TOTAL : 60 MARKS**

ALL THE BEST

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