PART A : MCQ ANSWERS

Question : 1 **2 Marks**

b) Rs. 1.108

Question : 2 **2 Marks**

c) Rs. 4,62,050

Question : 3 **2 Marks**

d) - Rs. 91,967

Question : 4 **2 Marks**

b) 2.0976

Question : 5 **2 Marks**

d) 11.60%

Question : 6 **2 Marks**

b) 20%

Question : 7 **2 Marks**

b) 17.41%

PART B : DESCRIPTIVE SOLUTIONS

Question : 1 **6 Marks**

(i) Computation of Beta Value

Calculation of Returns

Returns = $(D_1+(P_1-P_0) / P_0) \times 100$

Year	Returns
2012-13	$\frac{22+(253-245)}{245} \times 100 = 12.24\%$
2013-14	$\frac{25+(310-253)}{253} \times 100 = 32.41\%$
2014-15	$\frac{30+(330-310)}{310} \times 100 = 16.13\%$

Calculation of Returns from market Index

Year	% of Index Appreciation	Dividend Yield %	Total Return %
2012–13	$\frac{(2130-2013)}{2013} \times 100 = 5.81\%$	5%	10.81%
2013–14	$\frac{2350-2130}{2130} \times 100 = 10.33\%$	6%	16.33%
2014–15	$\frac{(2580-2350)}{2350} \times 100 = 9.79\%$	7%	16.79%

Computation of Beta

Year	Krishna Ltd. (X)	Market Index (Y)	XY	Y^2
2012–13	12.24%	10.81%	132.31	116.86
2013–14	32.41%	16.33%	529.25	266.67
2014–15	16.13%	16.79%	270.82	281.90
Total	60.78%	43.93%	932.38	665.43

Average Return of Krishna Ltd. = 60.78/3 = 20.26%

Average Market Return = 43.93/3 = 14.64%

$$\text{Beta}(\beta) = \frac{\sum XY - nXY}{\sum Y^2 - n\left(\bar{Y}\right)^2} = \frac{932.38 - 3 \times 20.26 \times 14.64}{665.43 - 3(14.64)^2} = 1.897$$

(ii) Observation

	Expected Return (%)	Actual Return (%)	Action
2012 – 13	6%+ 1.897(10.81% - 6%) = 15.12%	12.24%	Sell
2013 – 14	6%+ 1.897(16.33% - 6%) = 25.60%	32.41%	Buy
2014 – 15	6%+ 1.897(16.79% - 6%) = 26.47%	16.13%	Sell

Question : 2 **8 Marks**

Securities need to be ranked on the basis of excess return to beta ratio from highest to the lowest.

Security	R_i	β_i	$R_i - R_f$	$\frac{R_i - R_f}{\beta_i}$
A	15	1.5	8	5.33
B	12	2	5	2.5
C	10	2.5	3	1.2
D	9	1	2	2
E	8	1.2	1	0.83
F	14	1.5	7	4.67

Ranked Table

Security	R_i-R_f	β_i	σ^2_{ei}	$\frac{(R_i-R_f)\beta_i}{\sigma^2_{ei}}$	$\sum_{e=i}^{N}\frac{(R_i-R_f)\beta_i}{\sigma^2_{ei}}$	$\frac{\beta_i^2}{\sigma^2_{ei}}$	$\sum_{e=i}^{N}\frac{\beta_i^2}{\sigma^2_{ei}}$	C_i
A	8	1.5	40	0.30	0.30	0.056	0.056	1.923
F	7	1.5	30	0.35	0.65	0.075	0.131	2.814
B	5	2	20	0.50	1.15	0.20	0.331	2.668
D	2	1	10	0.20	1.35	0.10	0.431	2.542
C	3	2.5	30	0.25	1.60	0.208	0.639	2.165
E	1	1.2	20	0.06	1.66	0.072	0.711	2.047

$C_A = 10 \times 0.30 / [1 + (10 \times 0.056)] = 1.923$

$C_F = 10 \times 0.65 / [1 + (10 \times 0.131)] = 2.814$

$C_B = 10 \times 1.15 / [1 + (10 \times 0.331)] = 2.668$

$C_D = 10 \times 1.35 / [1 + (10 \times 0.431)] = 2.542$

$C_C = 10 \times 1.60 / [1 + (10 \times 0.639)] = 2.165$

$C_E = 10 \times 1.66 / [1 + (10 \times 0.7111)] = 2.047$

Cut off point is 2.814

$$Z_i = \frac{\beta_i}{\sigma^2_{ei}}\left[\left(\frac{(R_i-R_f)}{\beta_i}-C\right)\right]$$

$Z_A = (1.5 /40) (5.33 – 2.814) = 0.09435$

$Z_F = (1.5/30) (4.67-2.814) = 0.0928$

$X_A = 0.09435/[0.09435+0.0928] = 50.41\%$

$X_F = 0.0928/[0.09435+0.0928] = 49.59\%$

Funds to be invested in security A & F are 50.41% and 49.59% respectively.

Question : 3 **5 Marks**

(a) Let the weight of stocks of Economy A is expressed as w, then

(1- w) × 10.0 + w × 15.0 = 10.5; i.e., w = 0.1 or 10%.

(b) Variance of portfolio shall be:

(0.9)2 (0.16)2 + (0.1)2 (0.30)2 + 2(0.9) (0.1) (0.16) (0.30) (0.30) = 0.02423

Standard deviation is $(0.02423)^{½}$ = 0.15565 or 15.6%.

(c) The Sharpe ratio will improve by approximately 0.044, as shown below:

Sharpe Ratio = Expected Return-Risk Free Rate of Return / Standard Deviation

Investment only in developed countries: (10-3)/16 = 0.437

With inclusion of stocks of Economy A: (10.5 – 3) /15.6 = 0.481

Question : 4 **8 Marks**

			Scenario 1	Scenario 2
(i)	**Earnings of Mr. A through stock lending scheme**			
	Lending fee			
	31-01-20	1020 × 1% and 980 × 1%	10.20	9.80
	29-02-20	1040 × 1% and 960 × 1%	10.40	9.60
	31-03-20	1050 × 1% and 940 × 1%	10.50	9.40
	Earnings from lending per Share (A)		**31.10**	**28.80**
	Total No. of Shares		1000	1000
	Total Earning from Lending		**31,100**	**28,800**

(ii)	**Total Earnings of Mr. A during 01-01-2020 to 31-01-2020**		
	Dividend income per Share (B)	25.00	25.00
	Total earnings per share (A) + (B)	56.10	53.80
	Total No. of Shares	1000	1000
	Total Earning	**56,100**	**53,800**
(iii)	**Profit or loss to M/s. XYZ**		
	Gain on shortening the shares		
	(1,000 – 1,050) and (1,000 - 940)	(50.00)	60.00
	Lending fees paid	(31.10)	(28.80)
	Bank guarantee charges @ 8%	(20.00)	(20.00)
	Gain Per Share	**(101.10)**	**11.20**
	Total No. of Shares	1000	1000
	Total Gain on shortening the shares	**(1,01,100)**	**11,200**

Question : 5 **5 Marks**

(i) The Betas of two stocks:

Aggressive stock	- 40% - 4%/25% - 7% = 2
Defensive stock	- 18% - 9%/25% - 7% = 0.50

Alternatively, it can also be solved by using the Characteristic Line Relationship as follows:

$$R_s = \alpha + \beta R_m$$

Where α = Alpha, β = Beta, Rm = Market Return

For Aggressive Stock

4% = α + β (7%)

40% = α + β (25%)

36% = β (18%)

β = 2

For Defensive Stock

9% = α + β (7%)

18% = α + β (25%)

9% = β (18%)

β = 0.50

(ii) Expected returns of the two stocks:

Aggressive Stock	-	0.5 x 4% + 0.5 x 40% = 22%
Defensive Stock	-	0.5 x 9% + 0.5 x 18% = 13.5%

(iii) Expected return of market portfolio = 0.5 × 7% + 0.5% × 25% = 16%

∴ Market risk prem. = 16% - 7.5% = 8.5%

∴ SML is, required return = 7.5% + βi 8.5%

(iv) Rs = α + βRm

For Aggressive Stock

22% = αA + 2(16%)

αA = -10%

For Defensive Stock

13.5% = αD + 0.50(16%)

αD = 5.5%

Question : 6 **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 : 7 **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 : 8 **6 Marks**

(i) Equity Beta To calculate Equity Beta first we shall calculate Weighted Average of Asset Beta as follows:

= 1.45 × 0.74 + 1.20 × 0.26 = 1.073 + 0.312 = 1.385

Now we shall compute Equity Beta using the following formula:

$$\beta_{Asset} = \beta_{Equity}\left[\frac{E}{E+D(1-t)}\right] + \beta_{Debt}\left[\frac{D(1-t)}{E+D(1-t)}\right]$$

Accordingly,

$$1.385 = \beta_{Equity}\left[\frac{410}{410+170}\right] + \beta_{Debt}\left[\frac{170}{410+170}\right]$$

$$1.385 = \beta_{Equity}\left[\frac{410}{580}\right] + 0.24\left[\frac{170}{580}\right]$$

$\beta_{Equity} = 1.86$

(ii) Equity Beta on change in Capital Structure

Amount of Debt to be raised:

Particulars	Value
Total Value of Firm (Equity ₹410 Cr + Debt ₹170 Cr)	₹580 Cr
Desired Debt Equity Ratio	1.90 : 1.00
Desired Debt Level = $\frac{\text{Total Value} \times \text{Debt Ratio}}{\text{Debt Ratio} + \text{Equity Ratio}}$	₹380 Cr
Less: Value of Existing Debt	(₹170 Cr)
Value of Debt to be Raised	₹210 Cr

Equity after Repurchase = Total value of Firm – Desired Debt Value

= ₹580 Cr – ₹380 Cr = ₹200 Cr

Weighted Average Beta of KGFL:

Source of Finance	Investment (₹Cr)	Weight	Beta of the Division	Weighted Beta
Equity	200	0.345	$\beta_{(E = X)}$	0.345x
Debt – 1	170	0.293	0.35	0.103
Debt – 2	210	0.362	0.40	0.145
	580	Weighted Average Beta		0.248 + (0.345x)

βKGFL = 0.248 + 0.345x

1.385 = 0.248 + 0.345x

0.345x = 1.385 – 0.248

x = 1.137/0.345 = 3.296

βKGFL = 3.296

(iii) Yes, it justifies the increase as it leads to increase in the Value of Equity due to increase in Beta.

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