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Answer Paper	
Strategic Financial Management	**Duration**: 65
Details: Test – 2	**Marks**: 35

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

ANS-1

Period 1	Closing Prices	Change	Period 2	Closing Prices	Change
1	33453.99		11	33251.53	
2	33434.83	-19.16	12	33285.89	34.36
3	33431.93	-2.90	13	33329.28	43.39
4	33383.41	-48.52	14	33284.17	-45.11
5	33370.93	-12.48	15	33298.78	14.61
6	33340.75	-30.18	16	33325.38	26.6
7	33330.98	-9.77	17	33329.95	4.57
8	33335.08	4.1	18	33319.67	-10.28
9	33301.97	-33.11	19	33302.32	-17.35
10	33259.03	-42.94	20	33319.61	17.29

X	Y	X^2	Y^2	XY
-19.16	34.36	367.11	1180.61	-658.34
-2.90	43.39	8.41	1882.69	-125.83
-48.52	-45.11	2354.19	2034.91	2188.74
-12.48	14.61	155.75	213.45	-182.33
-30.18	26.6	910.83	707.56	-802.79

-9.77	4.57	95.45	20.88	-44.65
4.1	-10.28	16.81	105.68	-42.15
-33.11	-17.35	1096.27	301.02	574.46
-42.94	17.29	1843.84	298.94	-742.43
$\sum X$ = -194.96	$\sum Y$ = 68.08	$\sum X^2$ = 6848.66	$\sum Y^2$ = 6745.74	$\sum XY$ = 164.68
$\bar{X}$ = -21.66	$\bar{Y}$ = 7.56			

$$b = \frac{\sum XY - n\bar{X}\bar{Y}}{\sum X^2 - n(X^2)} = \frac{164.68 - 9(-21.66)(7.56)}{6848.66 - 9(-21.66)^2} = 0.624$$

$$a = \bar{Y} - b\bar{X} = 7.56 - 0.624(-21.66) = 21.08$$

$$r^2 = \frac{a\sum Y + b\sum XY - n(\bar{Y})^2}{\sum Y^2 - n\bar{Y}^2}$$

$$r^2 = \frac{21.08(68.08) + 0.624(164.68) - 9(7.56)^2}{6745.74 - 9(7.56)^2}$$

$$r^2 = 0.164$$

$$r = 0.405$$

There is moderate degree of correlation between the returns of two periods. Hence, it can be conclude that the market does not show the weak from efficiency

ANS-2

Yes, this statement is correct.

Arguments for technical analysis:

(a) Under influence of crowd psychology trend persists for some time. Technical analysis helps in identifying these trends early which is helping decision making.

(b) Shift in demand and supply is gradual rather than instantaneous. Technical analysis helps in detecting this shift rather early

(c) Fundamental information about a company is observed and assimilated by the market over a period of time. Hence price movements tend to more or less in same direction till the information is fully assimilated in the price of the stock.

Arguments against technical analysis:

(a) Technical are not able to offer a convincing explanation for tools employed by them.

(b) Empirical evidence in support of random walk hypothesis cast its shadow on it

(c) By the time trends are signaled by technical analysis, trends have already taken place

(5 Marks)

ANS-3

a. **Market**

R_M	P_i	$R_M p_I$	$R_{M-E(RM)}$	$[R_M - E(R_M)]$	Square of deviation xP_i
-0.07	0.25	-0.0175	-0.2045	0.0418	0.01050
0.12	0.10	0.0120	-0.0145	0.0002	0.00002
0.20	0.45	0.0655	0.0655	0.0043	0.00190

0.25	0.20	0.1155	0.1155	0.0133	0.00270
		0.1345			0.01512

Expected Return on market = 13.45

$= Var_M$ = 0.01512

$= O_M$ = 2.30%

Stock A

R_A (1)	P_i (2)	$R_A P_i$ (3)	$R_A - E(R_M)$ (4)	$R_M - E(R_M)$ (5)	Product (6)=(4)×(5)	Product× P_i (7)=(6)×(2)
-0.15	0.25	-0.0375	-0.319	-0.2045	0.0652	0.0163
0.19	0.10	0.0190	0.021	-0.0145	-0.0003	-0.00003
0.35	0.45	0.1575	0.181	0.0655	0.0119	0.0054
0.15	0.20	0.0300	0.019	0.1155	-0.0022	-0.00043
		0.1690				**0.02124**

Expected return on Stock A=$\sum R_A P_i$=16.9%

Stock B

R_B (1)	P_i (2)	$R_B P_i$ (3)	$R_B - E(R_M)$ (4)	$R_M - E(R_M)$ (5)	Product (6)=(4)×(5)	Product× P_i (7)=(6)×(2)

-0.08	0.25	-0.0200	-0.2035	-0.2045	0.0416	0.01040
-0.05	0.10	-0.0050	-0.1735	-0.0145	0.0025	0.00025
0.25	0.45	0.1125	0.1265	+0.0655	0.0083	0.00370
0.18	0.20	0.0360	0.0565	0.1155	0.0065	0.00130
		0.1235				**0.01565**

Expected Return on Stock B= $\sum R_B P_i = 12.35\%$

$$\text{=Beta}_A = \frac{\text{Cov }_{AM}}{\text{Var }_M} = \frac{[(R_A - E(R_A))][(R_M - E(R_M)P_i}{\text{Var }_M} = \frac{0.02124}{0.01512} = 1.40$$

$$\text{=Beta}_B = \frac{\text{Cov }_{BM}}{\text{Var }_M} = \frac{0.01565}{0.01512} = 1.04$$

b. $R_A = R_f + \beta_A (R_M) - R_f$

=7+1.4(13.45-7)=16.03

$=\alpha_A = E(R_A)$- Required return

=16.9-16.03=0.87

As alpha is positive, stock A is undervalued.

$=R_B$=7+1.04(13.45-7)=13.71

$=\alpha_B$ =12.35-13.71=1.36

As alpha is negative, stock A is overvalued.

ANS-4

Calculation of return on portfolio for 2009-10	(Calculation in Rs. / share)		
	M	**N**	
Dividend received during the year	10	3	
Capital gain/loss by 31.03.10			
Market value by 31.03.10	220	290	
Cost of investment	200	300	
Gain/loss	20	(-)10	
Yield	30	(-)7	
Cost	200	300	
% return	15%	(-)2.33%	
Weight in the portfolio	57	43	
Weighted average return			7.55%
Calculation of estimated return for 2010-11			
Expected dividend	20	3.5	
Capital gain by 31.03.11			
(220x0.2)+ (250x0.5)+(280x0.3) — 220=(253-220)	33	-	
(290x0.2)+(310x0.5)+(330x0.3) — 290= (312 — 290)	-	22	

Yield	53	25.5	
*Market Value 01.04.10	220	290	
% return	24.09%	8.79%	
*Weight in portfolio (1,000x220): (500x290)	60.3	39.7	
Weighted average (Expected) return			18.02%
(*The market value on 31.03.10 is used as the base for calculating yield for 10-11)			

Calculation of Standard Deviation M Ltd.

Exp. market value	Exp. gain	Exp. div.	Exp Yield (1)	Prob. Factor (2)	1 × 2	Dev. (PM– $\bar{PM}$)	Square of dev. (3)	2 × 3
220	0	20	20	0.2	4	-33	1089	217.80
250	30	20	50	0.5	25	-3	9	4.50
280	60	20	80	0.3	24	27	729	218.70
					53			σ2M = 441.00

Standard Deviation (σM) = 21 N Ltd.

Exp. market value	Exp. gain	Exp. div.	Exp Yield (1)	Prob. Factor (2)	(1) × (2)	Dev. (PN-PN)	Square of dev. (3)	(2)× (3)
290	0	3.5	3.5	0.2	0.7	-22	484	96.80
310	20	3.5	23.5	0.5	11.75	-2	4	2.00
330	40	3.5	43.5	0.3	13.05	18	324	97.20
					25.5			σ2N = 196.00

Standard Deviation (σN) = 14

Share of company M Ltd. is more risky as the $.D. is more than company N Lid.

ANS-5

Calculation of Investment Value of the Bond:

Government Bond	Purchase rate (F.V. Rs. 100)	Purchase Value Purchase Rate x [Rs. 5 Cr./100]
G.O.I. 2009	106.50	53250000
G.O.I. 2010	105.00	52500000
G.O.I. 2015	105.00	52500000
G.O.I. 2022	110.00	55000000

G.O.I. 2032	101.00	50500000			
Actual Investment	TOTAL	263750000			

Calculation of duration of the portfolio:

Government Bond	Purchase rate (F.V. Rs. 100)	Purchase Value Purchase Rate x [Rs. 5 Cr./100]	Proportion of Investment	Duration of the Bond	Weighted Duration
G.O.I. 2009	106.50	53250000	0.202	3.5	0.707
G.O.I. 2010	105.00	52500000	0.199	6.5	1.294
G.O.I. 2015	105.00	52500000	0.199	7.5	1.493
G.O.I. 2022	110.00	55000000	0.209	8.75	1.825
G.O.I. 2032	101.00	50500000	0.191	13	2.489
Actual Investment	TOTAL	263750000			7.808

Now the current duration of the portfolio is 7.8 years. If the bank wishes to maintain its duration so as to meet its future liability then it need to immunize the portfolio in such a way that change in interest rates does not affect the duration of the portfolio.

In the given case:

- If interest rates are expected to go down by 25 bps, then the Bank can enter into "rate anticipation swap". Since the rates are expected to go down, the duration of the portfolio would increase, though marginally. In order to maintain the duration to its original level the bank can swap long duration bonds with shorter duration bonds. Alternatively if the bank has cash it can add short duration bonds appropriately.

- If interest rates are expected to go up by 75 bps, then the Bank can enter into "rate anticipation swap". Since the rates are expected to go up, the duration of the portfolio would though marginally. In order to maintain the duration to its original level, the bank can swap short duration bonds with longer duration bonds. Alternatively if the bank has cash it can add long duration bonds appropriately.

ANS-6

Yes, Venture Capital Financing is unique manner of financing a Startup as it possesses the following characteristics:

(i) **Long time horizon:** The fund would invest with a long time horizon in mind. Minimum period of investment would be 3 years and maximum period can be 10 years.

(ii) **Lack of liquidity:** When VC invests, it takes into account the liquidity factor. It assumes that there would be less liquidity on the equity it gets and accordingly it would be investing in that format. They adjust this liquidity premium against the price and required return.

(iii) **High Risk:** VC would not hesitate to take risk. It works on principle of high risk and high return. So, high risk would not eliminate the investment choice for a venture capital.

(iv) **Equity Participation:** Most of the time, VC would be investing in the form of equity of a company. This would help the VC participate in the management and help the company grow. Besides, a lot of board decisions can be supervised by the VC if they participate in the equity of a company.