



MARKS:-

IDEAL TEST
SAPM PAPER (SOLUTION)

TIME:-
STD: TYBBI(VTH- SEMESTER)

OCT - 2012

1. (a) True or False:- (10)

1 mark for False (as all statements are False) and 1 mark for reason.

- (i) CAPM deals with observations of investors.
False. CAPM deals to describe how investor's behavior should affect security prices rather than explaining what investors actually observe in the market.
- (ii) Beta of individual stocks are stable.
False. Beta of individual stocks are unstable, beta of portfolio are fairly stable.
- (iii) Treasury Bills are issued at par and repayable at premium.
False. Treasury Bills are issued at discount and repayable at par.
- (iv) NRI's are allowed to invest in CP on transferrable basis.
False. NRI's are allowed to invest in CP on non-transferrable basis.
- (v) A mechanism through which loss on transaction is nil is called hedging.
False. Loss can be minimized through hedging.

(b) Full form. (1 mark for correct answer):- (5)

- (i) IDBI – Industrial Development Bank of India Limited
(ii) NYSE – New York Stock Exchange
(iii) VSATs – Very Small Aperture Terminals
(iv) SML – Security Market Line
(v) ICRA – Investment Information and Credit rating Agency of India Limited

OR

1. (a) Risk and Return (8)

Two sides of investment coin.-High risk, high return.-Risk aversion is human tendency. – Absolute risk is the insolvency of the borrower. –Government Bonds are free insolvency risk but offer low returns. –Equity shares highest risk can offer high returns. –Debentures and Fixed Deposits are not risk free offer high returns. –Maximize returns, minimize risk.

1. (b) Securities Market Features. (7)

The market for industrial securities is known as securities market.-For corporate securities such as shares and debentures. –Smaller market in India.-Segments are (a) Primary market

- (b) Secondary Market. –Primary Market is a market for raising fresh capital in the form of shares and debentures.-A market which deals in securities that have been already issued by companies is called Secondary Market.-Government Securities are traded.

2. (a) Random Walk Theory Importance. (8)

The changes in prices of stock show independent behavior and are dependent on the pieces of information that are received but within themselves are independent of each other.-New piece of information is independent.-KFA stock falls from ₹.85 to ₹.12 on various information like strike, lock out and suspension. Each information is independent. Information on stock will spread immediately.-Importance (i) Consistent with upward and

downward movements in prices. (ii) Stock prices represent good estimates of intrinsic values. (iii) Deals with forecasting. (iv) Opposite to technical analysis which depends on history.

2 (b) Credit rating Need (7)

Rating is an opinion on the future ability and legal obligation of the issuer to make timely payments of principal and interest on a specific fixed income security. The rating measures the credit quality of the issuer of the security.

Need (i) Choice of investments (ii) Independence of investment decisions (iii) Credibility of issuer is known (iv) Risk can be recognized (v) safeguard against bankruptcy (vi) Easy understandability of investment proposal (vii) Quick understanding of the credit instruments.

3 (a) Powers of SEBI (8)

(i) Powers relating to stock exchanges and intermediaries (ii) Powers relating to monetary penalties (iii) Powers to initiate actions relating to functions assigned (iv) Powers relating to insider trading (v) Power under SCRA (vi) Powers to regulate business of stock exchange.

3 (b) Concept of Financial Ratios Limitations (7)

-Study of relationship between various in financial statements. (i) Liquidity Ratios (ii) Profitability Ratios (iii) Solvency Ratios (iv) Leverage Ratios(v) Efficiency Ratios (vi) Ratios Relevant for Equity shareholders Limitations.-(i) Mere guide to action (ii) Not substitute for reasoning and judgment (iii) They do not indicate the price changes (iv) They are not reliable as they may be influenced by window dressing (v) Rough Estimates and regarded as analysis of historical data (vi) Inconsistent accounting practices may render computations and analysis of ratios useless.

4. Short Notes (15)

- (a) Online Trading:- Started in India. Introduction of demat. ICICI Direct, HDFC Securities, SHCIL started it. Buy and sell online. Internet Connection is required. Three Accounts-Demat Account, Bank Account, Online Trading Account. Password is required. Computers Trading is popular.
- (b) Commercial Paper:- Money market security. Short term. Unsecured promissory note issued by a firm for the loan taken. Issued by reputed companies for meeting their urgent short term needs. Issued for 180 days. Issued at discount redeemable at face value. High Amount.
- (c) Commodity Exchange:- NCDEX and MCX. Futures trading in stock market. Buying and selling of a number of agri-commodities. Pulses, sugar, gur, metals and crude oil. Contracts are purchased/sold, executed at prices. To educate the traders.

Practicals

2 (a) Holding Period Return (8)

- (i) Holding Period = 1 year (January 2011 to January 2012)
- (ii) Investment in shares.

| Company | No. of Shares | Price ₹ | Total ₹ |
|---------|---------------|------------------|---------|
| A Ltd | 100 | 290 | 29000 |
| B Ltd | 100 | 190 | 19000 |
| C Ltd | 100 | 100 | 10000 |
| D Ltd | 100 | 390 | 39000 |
| E Ltd | 100 | 290 | 29000 |
| | | | 126000 |
| | | + Brokerage | 8500 |
| | | Total Investment | 134500 |

(iii) Dividend Income

$$= 600 + 600 + 500 + 700 + 700$$

$$= ₹ 3100$$

(iv) Bonus Shares of A Limited

$$= 100 \times \frac{1}{2}$$

$$= 50$$

Total shares of A Limited = 150

(V) Sale of Investment

| Company | No. of shares | Prices ₹ | Total ₹ |
|---------|---------------|---------------|---------|
| A Ltd | 150 | 405 | 60750 |
| B Ltd | 100 | 290 | 29000 |
| C Ltd | 100 | 140 | 14000 |
| D Ltd | 100 | 460 | 46000 |
| E Ltd | 100 | 500 | 50000 |
| | | | 199750 |
| | | (-) Brokerage | 9700 |
| | | Net Sales | 190050 |

(Vi) Return = Dividend + Capital Gain

$$= ₹ 3100 + ₹ (190050 - 134500)$$

$$= ₹ 3100 + ₹ 55550$$

$$= ₹ 58650$$

(vii) Holding Period Return = $\frac{\text{Return}}{\text{Investment}} \times 100$

$$= \frac{₹ 58650}{₹ 134500} \times 100$$

$$= 43.6059\%$$

$$= 43.61\%$$

2 (b)

Computation of NPV

(7)

Cash Flow

Present Value

| Year | I | II | Discount Factor | I | II |
|------|--------|--------|---------------------|--------|--------|
| 1 | 400000 | 200000 | 0.9091 | 363640 | 181820 |
| 2 | 200000 | 400000 | 0.8264 | 165280 | 330560 |
| 3 | 200000 | 200000 | 0.7513 | 150260 | 150260 |
| 4 | 200000 | 200000 | 0.6830 | 136600 | 136600 |
| | | | PV of Cash Inflows | 815780 | 799240 |
| | | | PV of Cash Outflows | 800000 | 800000 |
| | | | Net Present Value | 15780 | - 760 |

NPV is positive under Option I while it is negative under Option II, Considering time value of money, Siddhi should consider alternative I. I will give better returns.

3 (b) ψ TM (7)

$$\begin{aligned} \psi TM &= I + \frac{F-P}{n} \\ &= \frac{\frac{F+P}{2}}{\frac{1000+1060}{2}} \\ &= \frac{75 + \frac{1000-1060}{20}}{\frac{1000+1060}{2}} \\ &= \frac{75 + \frac{-60}{20}}{1030} \\ &= \frac{75-3}{1030} \\ &= 6.9902\% \\ &= 7.00\% \end{aligned}$$

3 (a) Beta (8)

| Year | R ₁ | R _m | (R ₁ - \bar{R}_1) | (R _m - \bar{R}_m) | (R ₁ - \bar{R}_1)(R _m - \bar{R}_m) | (R _m - \bar{R}_m) ² |
|------|----------------|----------------|---------------------------------|---------------------------------|--|--|
| 1 | 10 | 12 | -1 | 0 | 0 | 0 |
| 2 | 12 | 11 | 1 | -1 | -1 | 1 |
| 3 | 15 | 14 | 4 | 2 | 8 | 4 |
| 4 | 10 | 12 | -1 | 0 | 0 | 0 |
| 5 | 08 | 11 | -3 | -1 | 3 | 1 |
| | 55 | 60 | R ₁ =11 | R _m =12 | 10 | 6 |

$$\begin{aligned} B &= \frac{Cov(R_1 R_m)}{\sigma^2 m} \\ &= \frac{\Sigma(R_1 - \bar{R}_1)(R_m - \bar{R}_m)/n-1}{\Sigma(R_1 - \bar{R}_1)^2/(n-1)} \\ &= \frac{10/4}{6/4} = \frac{2.5}{1.5} \\ &= 1.67 \end{aligned}$$

∴ Beta of the security is 1.67.

4 (a) Shape, Treynor, Jensen (8)

$$\begin{aligned} \text{Shape's Ratio} &= \frac{R-R_f}{\sigma} \\ X &= \frac{17-7}{13} = 0.7692 \\ Y &= \frac{19-7}{14} = 0.8571 \\ Z &= \frac{14-7}{10} = 0.70 \\ \text{Market} &= \frac{14-7}{12} = 0.667 \\ \text{Treynor's Ratio} &= \frac{R-R_f}{\beta} \\ X &= \frac{17-7}{1.25} = 8 \\ Y &= \frac{19-7}{1.35} = 8.89 \\ Z &= \frac{14-7}{1.1} = 6.36 \\ \text{Market} &= \frac{15-7}{1} = 8 \end{aligned}$$

Jensen's Differential Measure

$$= R_p - E(r)$$

OR

$$= \text{Actual Returns} - \text{CAPM Returns}$$

| <u>Returns as per CAPM</u> | <u>Jensen's Measure</u> |
|----------------------------|-------------------------|
| X | X |
| = 7+1.25 (15-7) | = 17 - 17 |
| = 7+1.25 (8) | = 0% |
| = 7+10 | |
| = 17% | |
| Y | Y |
| = 7+1.35(15-7) | = 19-17.80 |
| = 7+1.35 (8) | = 1.20% |
| = 7+10.80 | |
| = 17.80% | |
| Z | Z |
| = 7+1.10(15-7) | = 14-15.80% |
| = 7+1.10 (8) | = -1.80% |
| = 15.80% | |
| Market | Market |
| = 7+1(15-7) | =15-15 |
| = 7+1(8) | =0% |
| = 7+8 | |
| = 15% | |

Summary

| Fund | Sharpe | | Treynor | | Jensen | |
|--------|--------|------|---------|------|--------|------|
| | Result | Rank | Result | Rank | Result | Rank |
| X | 0.7692 | 2 | 8 | 8 | 0 | 2 |
| Y | 0.8571 | 1 | 8.81 | 1 | 1.20 | 1 |
| Z | 0.70 | 3 | 6.36 | 3 | -1.80 | 3 |
| Market | 0.667 | - | 8 | - | 0 | - |

Comment – Fund y should be selected for investment.

4 (b) Dividend Growth/Equity Valuation

$$\begin{aligned}
 P_0 &= \frac{D_1}{K_e - g} \\
 &= \frac{12.5}{30\% - 25\%} \\
 &= \frac{12.5}{5\%} \\
 &= \frac{12.5}{0.05} \\
 &= ₹ 250
 \end{aligned}$$

₹ 250 is intrinsic value. Market price is ₹.260, Therefore the share is overvalued and not fairly priced should not be purchased.