

**Birla Institute of Technology and Science, Pilani**  
**First Semester: 2022-2023**  
**Mid-semester Test**

Course Name & No.: **Security Analysis and Portfolio Management ECON F 412 / FIN F 313**  
 Maximum Marks: (105 Marks) 35% Weight-age  
 Duration: 90 Minutes

Date: 01 Nov 22  
 Type: Closed Book

1. i) Differentiate between growth and value investing by giving due rationale and logic. **(8)**  
 ii) Which of the following statements most accurately describes the effect of financial leverage on a company's net income and return on equity?

A. An increase in financial leverage always results in an increase in a company's net income and return on equity.

B. An increase in financial leverage always results in a decrease in a company's net income and return on equity.

C. An increase in financial leverage may result either in an increase or decrease in a company's net income and return on equity.

Explain by giving example **(6)**

2. i) Suppose a firm is expected to increase dividends by 20% in one year and by 15% in two years. After that, dividends will increase at a rate of 5% per year indefinitely. If the last dividend was Rs. 1.00 and the required return is 20%, what is the price of the stock? Will you buy the stock at Rs 10? Justify **(8)**

ii) You have been given the information on the following four banks.

Sr	Company	Last Price	CEPS *	EPS *	P/C	P/E	Net Interest Margin %	NPA %
1	<a href="#">Dhanlaxmi Bank</a>	12.26	0.11	0.11	111.45	111.45	3.00	14
2	<a href="#">Bandhan Bank</a>	270.95	4.65	3.97	58.27	68.25	2.75	12
3	<a href="#">ICICI Bank</a>	924.20	38.45	36.77	24.04	25.13	1.50	5
4	<a href="#">HDFC Bank</a>	1,454.25	75.04	72.17	19.38	20.15	1.75	3

\* Trailing 12 months Cash EPS & EPS (Calculated on stand-alone numbers)

A. Which bank stock would you pick up for investing and Why?

B. What other information on the above banks will help you to take more informed decision? Justify. **(6+2)**

3. Your desk analyst supplies you the following data on two stocks (all % are in annual terms):

State of Economy	Associated Probability of State of Economy	Anticipated rate of return on Stock A in each state	Anticipated rate of return on Stock B in each state
Recession	.15	11%	-25%
Normal	.55	18%	11%
Optimistic	.30	8%	31%

On that day's newspaper you also observe the following information on bond yields and other market variables (assume tax rate to be zero):

Yield on 5-year AAA rated bonds: 11%; Yield on 91-Day Treasury Bills: 4.3%; Maturity premium on long-maturity bonds: 200 basis points; Expected annual inflation: 3.5%; Historical annual return on stock market: 11.8%.

Based on the above answer:

- a. Which stock is most favorable for inclusion in a well-diversified portfolio, and which is the least favorable? Provide appropriate calculations and justification. **(15)**
- b. Which stock has a lower risk-to-reward ratio? Show objectively with calculations. **(10)**

4. Ejoy and Kay are two traders at a large asset management company (LAMC). They both review the limit order book for YAE Ltd. (given below) and based on the prices Ejoy places a market sell order for 1,100 shares, and Kay places a limit buy order having a limit price of \$17.15 for 800 shares. Consider the below data to answer the questions that follow (assume commissions and taxes to be zero):

Bid quotes		Ask quotes	
Price (\$)	Quantity	Price (\$)	Quantity
17.15	900	17.19	1,200
17.14	1,500	17.20	800
17.12	1,100	17.22	1,100

- a. Trader \_\_\_\_\_ order *demand*s liquidity and trader \_\_\_\_\_ order *supply*s liquidity to the market? Trader \_\_\_\_\_ order is likely to be executed first, why? (fill in all the blanks with the name/names of the trader, and *reproduce the whole statement* as it is in the answer sheet). **(6)**
- b. How much Ejoy will receive on per share basis for executing the order placed (answer up to 4 decimals)? **(8)**
- c. Assuming Kay's limit order was executed at \$17.14 and the bid-ask spread at that moment was \$0.04, how much will be Kay's return on investment (in % up to 4 decimals) if 500 shares of 800 shares are immediately sold at the ideal price per share? **(7)**
- d. Suppose Ejoy does not hold any shares at the time of placing the order and suppose the initial margin is 60%, and the maintenance margin is 75% of the initial margin. Based on this information estimate the margin call threshold price (up to 2 decimals) for Ejoy. Assume initial cash inflow to be equal to the one calculated in sub-part b of this question. **(8)**
- e. Based on your calculation in part b, calculate the % RoI for Ejoy if the price of the share subsequently changes by +5%, -3%, -7% and 11% respectively, and the initial margin requirement remains the same as part d. Tabulate your results. *Ignore the maintenance margin requirement for this part.* Hint: Use leverage factor for quick (approximate) calculation. **(6)**

5. Consider an investor opting between two risky portfolios: a large-cap stock portfolio and a small-cap stock portfolio. Current risk-free rate is 2.8%, and the historical rates on benchmark index is expected to remain same as their long-term historical rate. Other data is given in the table below:

	Large cap	Small cap
Expected return	10.0%	13.4%
Expected volatility (risk)	15.2%	21.1%

Suppose investor M wants to invest in that risky portfolio that promises the best possible Sharpe ratio. However, M also does not want to expose the portfolio to a high level of risk, and is willing to invest in a portfolio having an expected volatility of maximum 15.2%, and yet, enjoy an expected return more than 10%. Show all calculations and results to demonstrate how such a portfolio can be created. **(17)**

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