Name:_____________________________________ Id. No:___________________

Birla Institute of Technology and Science, Pilani
First Semester: 2023-2024
Comprehensive Exam (Regular)

Course Name & No.: **Security Analysis and Portfolio Management (ECON F 412)**
Maximum Marks: (80 Marks) 40% Weight-age Date: 06 Dec 23
Duration: 180 Minutes Type: Closed Book

Instructions for the students (PART A – 40 Marks; Time: 90 minutes)

1. Write your name and BITS ID No in the space provided at the top of this page.
2. ***Part A*** of the paper consists of 30 MCQs carrying equal marks. The entire Part A carries 40 marks.
3. **Negative marking**: 0.25 marks will be deducted for each incorrect answer.
4. For MCQs, write your answers in the table provided below. Answers written elsewhere or in incorrect order will not be evaluated. **Overwritten/ambiguous answers will not be evaluated.**

Table for MCQs

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

1. To assess a company's ability to fulfill its long-term obligations, an analyst would most likely examine:
a. activity ratio b. liquidity ratio c. solvency ratio d. efficiency ratio e. none

2. Which of the following ratios would be most helpful in determining a company's ability to cover its lease and interest payments?
a. Return on equity b. payables turnover c. total asset turnover d. fixed charge coverage e. none

3. An analyst is evaluating the solvency and liquidity of Apex Manufacturing and has collected the following data (in millions of euro):

	FY5	FY4	FY3
Total debt	2,000	1,900	1,750
Total equity	4,000	4,500	5,000

Which of the following would be the analyst's most likely conclusion?
a. The company is becoming increasingly less solvent, as evidenced by the increase in its debt-to-equity ratio from 0.35 to 0.50 from FY3 to FY5.
b. The company is becoming less liquid, as evidenced by the increase in its debt-to-equity ratio from 0.35 to 0.50 from FY3 to FY5.
c. The company is becoming increasingly more liquid, as evidenced by the increase in its debt-to-equity ratio from 0.35 to 0.50 from FY3 to FY5.
d. The company is becoming increasingly more profitable, as evidenced by the increase in its RoE.
e. none

4. With regard to the data in the above question, what would be the most reasonable explanation of the financial data?
a. The decline in the company's equity results from a decline in the market value of this company's common shares.
b. The increase in the company's debt from FY3 to FY5 indicates that lenders view the company as increasingly creditworthy.

c. The decline in the company's equity indicates that the company may be incurring losses, paying dividends greater than income, and /or repurchasing shares.
d. The increase in the company's debt may be attributable to increase in the market interest rate, and hence a higher interest cost.
e. none

5. An analyst compiles the following data for a company:

	FY13	FY14	FY15
ROE	19.8%	20.0%	22.0%
ROA	8.1%	8.0%	7.9%
Total Asset Turnover	2.0	2.0	2.1

Based only on the information above, the most appropriate conclusion is that, over the period FY13 and FY15, the company's:
a. net profit margin and financial leverage have decreased
b. net profit margin and financial leverage have increased
c. net profit margin has decreased but its financial leverage has increased
d. net profit margin has increased but its financial leverage has decreased
e. none

6. The P/E ratio is a measure of:
a. The multiple that the stock market places on a company's EPS.
b. The relationship between the company's earnings and its net worth
c. The sensitivity with which the stock price is expected to change upon news arrival
d. The earnings for one common share of stock
e. none

7. The claims of the preferred shareholders on the firm's ____ are paid-off ____ that of shareholders and ____ that of creditors:
a. Liabilities, after, before b. Assets, before, after c. Liabilities, before, after
d. Assets, after, before e. Owner's equity, before, after

8. The line depicting the total risk and expected return of portfolio combinations of a risk-free asset and any risky asset is the:
a. security market line b. security premium line c. security characteristic line d. Markowitz's efficient frontier e. none

9. Three equity fund managers have performance records summarized in the below table:

	Mean Annual Return (%)	St. Deviation of Return (%)
Manager 1	14.38	10.53
Manager 2	9.25	6.35
Manager 3	13.10	8.23

Given the risk-free rate of return of 2.6%, which manager performed best based on the Sharpe ratio?
a. Manager 1 b. Manager 2 c. Manager 3

10. For the next three questions (Q10-12) use the data given below:

Security	Exp. Annual Return (%)	Exp. St. Deviation (%)	Correlation between Security and Market
Security 1	11	25	0.6
Security 2	11	20	0.7
Security 3	14	20	0.8
Market	10	15	1.0

Which security has the highest total risk?
a. Security 1 b. Security 2 c. Security 3

11. Which security has the highest beta measure?
a. Security 1 b. Security 2 c. Security 3
12. Which security has the least amount of market risk?
a. Security 1 b. Security 2 c. Security 3
13. The following information relates to Q13-15.

Asset	Outcome 1 (%)	Outcome 2 (%)	Outcome 3 (%)	Outcome 4 (%)
1	12	0	6	6
2	12	6	0	6
3	0	6	12	6

Which pair of assets is perfectly negatively correlated?
a. Asset 1 and Asset 2 b. Asset 1 and Asset 3 c. Asset 2 and Asset 3 d. none
14. If the analyst constructs two-asset portfolios that are equally weighted, which pair of assets has the lowest expected standard deviation?
a. Asset 1 and Asset 2 b. Asset 1 and Asset 3 c. Asset 2 and Asset 3
15. If the analyst constructs two-asset portfolios that are equally weighted, which pair of assets provides the least risk reduction?
a. Asset 1 and Asset 2 b. Asset 1 and Asset 3 c. Asset 2 and Asset 3
16. In an efficient market, the change in a company's share price is most likely the result of:
a. insider's private information b. the previous day's change in stock price c. new information that came to the market last week d. participation of foreign institutional investors e. none
17. With respect to efficient market theory, regulations that restrict short selling in a market will most likely:
a. reduce market efficiency b. not affect market efficiency c. contribute to market efficiency
18. Which one of the following statements best describes the semi-strong form of market efficiency?
a. statistical models examine the historical patterns in stock prices.
b. semi-strong form efficient markets are not necessarily weak-form efficient.
c. security prices reflect all publicly known available information.
d. passive portfolio management is most likely to earn abnormal returns.
e. none
19. Technical analysts assume that markets are:
a. weak-form efficient b. weak-form inefficient c. semi-strong-form efficient
d. semi-strong form inefficient e. none
20. With respect to efficient markets, a company whose share price reacts gradually in the market to the public release of its annual report most likely indicates that the market is:
a. receiving additional information about the company
b. semi-strong efficient c. subject to behavioral biases d. experiencing a market abnormality e. none
21. An entertainment company recently announced that it will be offering 30 million shares to the public at $45.50 each. This transaction is most likely a sale in the:
a. futures markets b. primary market c. secondary market d. money market
e. none
22. A trader has purchased 200 shares of a non-dividend paying firm on margin at a price of $50 per share. The leverage ratio is 2.5. Six-months later, the trader sells these shares at $60

per share. Ignoring the interest on the borrowed funds and other transaction costs, what was the return to the trader during the six-month period (approx.)?

a. 20 percent b. 33.33 percent c. 50 percent d. 70 percent e. none

23. An online brokerage firm has set the minimum margin requirement at 55 per cent. What is the maximum leverage ratio associated with a position financed by this minimum margin requirement?

a. 1.55 b. 1.82 c. 2.22 d. 1.75 e. none

24. On Jan 1 Rishi purchased 500 shares of a company at Rs 32 per share. The stock was bought on 75 per cent margin. One month later on Feb 1, Rishi had to pay interest on the amount borrowed at a rate of 2% per month and also received a dividend of Rs 0.5 per share at that time. All stocks were sold for Rs 28 per share at the end of the month (i.e. on Feb 1). Total commissions paid were Rs 10 on purchase and Rs 10 on stock sale. What was the rate of return on this investment for the one-month period (approx.)?

a. -12.5% b. -15.4% c. -50.1% d. -16.75% e. none

25. The current price of a stock is Rs 25 per share. You have Rs 10,000 available with you, and you decide to borrow Rs 10,000 from your broker. You invest the entire amount to purchase the stock. If the maintenance margin is 30 per cent, what is the threshold price below which you will receive the first margin call?

a. Rs 9.62 b. Rs 17.86 c. Rs 19.71 d. Rs 21.25 e. none

26. The market price for a share of ABC Ltd. in early September 2023 was Rs 184.15. The company's financial year is from January to December. The EPS forecast for 2023 as of September 2023 was Rs 16.19, and the EPS forecast for 2024 as of September 2023 was Rs 18.35. Based on this information, the simple average forward P/E forecast based on the given information is (approx.):

a. 10.70 b. 10.52 c. 10.34 d. 10.80 e. none

27. The most recently concluded financial year's data for ABC Ltd. shows that the company maintains a dividend payout ratio of 45%, the cost of equity is 12%, and the expected growth rate is 8%. Based on the above, the P/E ratio is closest to:

a. 9.75 b. 11.25 c. 12.39 d. 14.44 e. 15.01

28. ABC Ltd. reported net sales of $10,815 million and had 789 million shares outstanding. If the current price is $6.72 per share, how much are investors willing to pay for this stock for per dollar of sales that the company makes (approx.):

a. 1.23 b. 0.96 c. 0.88 d. 0.50 e. none

29. A stock is currently trading at Rs 850. Using the historical data, you conclude that the market risk premium is 11% the risk-free rate is 6%, and the beta of the stock is 1.25. If the stock is fairly priced the expected price of the stock after one year will be:

a. Rs 1082 b. Rs 1018 c. Rs 947 d. Rs 969 e. none

30. For the next five years, the annual dividends of stock are expected to be $2.0, $2.1, $2.2, $3.5, and $3.75. The stock price is expected to be $40 in five years. If the required rate of return on equity is 10 per cent per annum, the fair price of this stock is nearest to (in $):

a. 32.38 b. 33.69 c. 34.76 d. 35.81 e. none

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