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| **C:\Users\ADMIN\Desktop\j.png** | **JAIPURIA INSTITUE OF MANAGEMENT, INDORE**  Post Graduate Diploma in Management (Batch 2023-25) |
| **Course Title: Equity Analysis & Portfolio Management, (Course Code: 40222)**  **End Term Examination, Term - IV ( 5th Oct, 2024)** | |
| **Time Duration: 2 Hours Total Marks: 40** | |

***General Instructions*:**

1. *Answer the questions as directed. The break-up of the marks is given wherever necessary.*
2. *Marks against each question are indicated to its right.*
3. *Answer all the questions of a ‘Section/Question’ in one place in continuation.*
4. *Answers should be brief and to the point. Cite examples wherever required.*
5. *Do not write anything on the question paper except your roll number.*
6. *You can use any scientific / financial calculators*
7. *MS Excel may not be required to do calculations*
8. *It is* ***a closed book exam***

Q1 Nick Jones Company currently sells for $32.50 per share. In an attempt to determine if its equity stock is fairly priced, an analyst has assembled the following information:

* The before-tax required rates of return on Nick Jones debt, preferred stock, and common stock are 7%, 6.8% and 11% respectively.
* The company’s target capital structure is 30% debt, 15% preferred stock, and 55% common stock.
* The market value of the company’s debt is $145 million, and its preferred stock is valued at $65 million.
* Nick Jones’ FCFF for the year just ended is $28 million. FCFF is expected to grow at a constant rate of 4% for the foreseeable future.
* The tax rate is 35%
* Nick Jones has 8 million outstanding common shares.

*Inspect* the intrinsic value per common share of Nick Jones. *Infer* if the stock is underpriced.

**(Marks 8)**

Q2. Christie Joseph, CFA has been assigned to analyze N&G company. Joseph assumes that N&G’s earnings and dividends will grow at a constant rate of 13%. Exhibits P-1 and P-2 provide financial statements and other information for N&G.

* 1. *Discover* a justified P/E (both trailing and forward) based on the information in Exhibits P-1 and P-2 and on Joseph’s assumptions for N&G. Show workings.
  2. *Examine*, within the context of the constant dividend growth model, how each of the fundamental factors shown below would affect the P/E.

b.1. The risk (beta) of N&G increases substantially

b.2. The estimated growth rate of N&G’s earnings and dividends increases

b.3. The market risk premium increases

Note: A change in a fundamental factor is assumed to happen in isolation; interactive effects between factors are ignored. Every other item of the company is unchanged.

**Exhibit P-1 N&G Actual 2023 and 2024 Financial Statements for fiscal year ending 31st March (In Millions $, except per share data)**

|  |  |  |
| --- | --- | --- |
| **Income Statement** | **2023** | **2024** |
| Revenue | 474 | 598 |
| Depreciation | 20 | 23 |
| Other operating costs | 368 | 460 |
| Income before taxes | 86 | 115 |
| Taxes | 26 | 35 |
| Net income | 60 | 80 |
| Dividends | 18 | 24 |
| EPS | $0.714 | $0.952 |
| DPS | $0.214 | $0.286 |
| Common Shares outstanding | 84 | 84 |
| **Balance Sheet** | **2023** | **2024** |
| Current assets | 201 | 326 |
| Fixed assets | 474 | 489 |
| Total assets | 675 | 815 |
| Current Liabilities | 57 | 141 |
| Long term debt | 0 | 0 |
| Shareholder’s equity | 618 | 674 |
| Total Liabilities and Equity | 675 | 815 |
| Capital expenditures | 34 | 38 |

**Exhibit P-2 Selected Financial Information**

|  |  |
| --- | --- |
| **Required rate of return on equity (Ke)** | 14% |
| **Growth rate of industry** | 13% |
| **Industry P/E** | 26 |

**Marks (6+6)**

Q3.Suppose that the risk–free rate is 5 per cent and the expected return on the market portfolio of risky assets is 13 per cent. An investor with $1 million wants to achieve a 17 per cent rate of return on a portfolio combining a risk-free asset and the market portfolio of risky assets. *Recommend* how much this investor would need to borrow at the risk-free rate to establish this target expected return.

**Marks (4)**

Q4. Martino is evaluating the following investments:

Portfolio A: E(RA) = 12%, Standard Deviation (RA) = 15%

Portfolio B: E(RB) = 10%, Standard Deviation (RB) = 8%

Portfolio C: E(RC) = 10%, Standard Deviation (RC) = 9%

1. *Assess* the choice among Portfolios A, B, and C using Portfolio Management Decision Rule
2. *Evaluate* the choice among Portfolios A, B, and C assuming that borrowing and lending at a risk-free rate of 2% is possible to select the best portfolio.

**Marks (3+4)**

Q5. You are a portfolio manager at a mid-sized investment firm. One of your clients, Mr. Sharma, recently expressed concerns about his investment returns after reading a research article discussing how stock markets are "completely efficient" and cannot be consistently outperformed. The article heavily referenced the *Efficient Market Hypothesis* (EMH) and mentioned the *Fama-French Three-Factor Model*.

Mr. Sharma's current portfolio includes a mix of large-cap growth stocks, small-cap value stocks, and mid-cap dividend stocks. He has observed that the large-cap growth stocks have underperformed recently and is concerned about your overall strategy.

In light of these concerns, Mr. Sharma has asked you the following:

1. *Can the Efficient Market Hypothesis (EMH) explain why my portfolio is underperforming in some areas?*
2. *Can I adjust my portfolio to account for market inefficiencies or risks I may be unaware of?*

As a portfolio manager, it's crucial to thoroughly *evaluate* the validity of Mr. Sharma's concerns using concepts of EMH, systematic and unsystematic risk, and the Fama-French Three-Factor Model. Your comprehensive qualitative analysis will be the basis for a clear recommendation about whether his portfolio should be adjusted.

**(Marks 9)**