

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086
(For candidates admitted during the academic year 2020-2021 and thereafter)

B.COM. DEGREE EXAMINATION – APRIL 2024
HONOURS
SIXTH SEMESTER

COURSE : MAJOR – CORE
PAPER : INVESTMENT ANALYSIS AND APPRAISAL
COURSE CODE : 20BH/MC/IA64
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

Answer all the questions: **(10 x 2 = 20)**

1. What is 'Fundamental Analysis'?
2. State the benefits of Monte Carlo Simulation technique
3. What is Yield-to-Maturity?
4. Write a note on circuit filters.
5. List any two price indicators.
6. State any two assumptions of technical analysis.
7. What is unsystematic risk?
8. Lancaster Corporation is evaluating two mutually exclusive investment projects, Project A and Project B. The following NPV data has been calculated for each project at the company's cost of capital of 12%:
 - Project A: NPV at 12% = \$80
 - Project B: NPV at 12% = \$110Based on the objective of maximizing shareholder wealth, determine which project(s), if any, should Lancaster Corporation accept.
9. A company has issued irredeemable loan notes with a coupon rate of 7%. If the required return of investors is 4%, what is the current market value of the debt?
10. In a portfolio of the company, Rs. 120,000 is invested in asset X which has an expected return of 9.2%, Rs. 80,000 in asset Y with expected return of 8.9% and Rs. 50,000 in asset Z with expected return of 12.5%. What is the expected return of the portfolio?

SECTION – B

Answer any five questions: **(5 x 8 = 40)**

11. Discuss the different types of risks involved in investment in Bonds.
12. Analyse the stages of Industry Life-cycle.
13. Illustrate and explain Markowitz's Portfolio Model.
14. The following information is available for five securities P, Q, R, S and T.

<i>Security</i>	<i>Return</i>	<i>Risk</i>
P	22%	26%
Q	16%	18%
R	11%	12%
S	17%	15%
T	16%	15%

- a) Calculate coefficient of variation of these securities. **(5 marks)**
 b) Does any security dominate another one? Why? **(3 marks)**
15. An investor is evaluating two investment options. Both have equal returns but the probabilities of occurring the returns is different in both. The return and probabilities are:

Return	Probability in P1	Probability in P2
21%	0.5	0.4
25%	0.2	0.1
18%	0.3	0.5

Find out the expected return from both the proposals and evaluate the risk of these returns.

16. A company has in issue 12% redeemable debt with 5 years to redemption. Redemption is at nominal value. The current market value of the debt is \$107.59. The corporation tax rate is 30%.

Required:

- a. What is the return required by the debt providers (the pre-tax cost of debt)? **(4 marks)**
 b. What is the post-tax cost of debt to the company? **(4 marks)**
17. XYZ Corporation is considering a new investment opportunity in the renewable energy sector. The project requires a total investment of \$30 million, which will be financed as follows: \$8 million from internal funds, \$12 million from a public offering of equity shares, and \$10 million from a long-term bank loan.

The project is expected to generate annual pre-tax operating cash inflows of \$6 million for 15 years. At the end of the project's life, the residual value is estimated to be \$5 million after tax.

As part of the government's initiative to promote renewable energy, XYZ Corporation is eligible for a subsidized loan of \$5 million at an interest rate of 4% for a term of 10 years. Additionally, the remaining \$5 million of debt will be obtained through a conventional bank loan with an interest rate of 7% for 15 years.

XYZ Corporation's equity beta is 1.0, and its financial gearing ratio is 50% equity and 50% debt by market value. The industry average equity beta for renewable energy projects is 1.3, with a gearing ratio of 60% equity and 40% debt by market value. The risk-free rate is 4.5% per year, and the market return is 10% per year.

Issue costs for the public offering are estimated to be 2% of the total amount raised, while issue costs for the bank loan are estimated to be 1%. No issue costs are associated with the subsidized loan. Issue costs are not tax-deductible.

The corporate tax rate is 25%, and tax is paid in the year of returns. Tax-deductible depreciation may be ignored.

Calculate the Adjusted Present Value (APV) of the investment opportunity for XYZ Corporation.

SECTION – C

Answer any one questions:

(1 x 20 = 20)

18. Discuss the macroeconomic variables influencing the Indian Stock Prices.
19. Explain the Price and Volume indicators of Technical Analysis
20. An investor is evaluating two investment options Project X and Y. Both the projects have equal returns but the probabilities of the returns occurring for the two proposals are different. The returns and probabilities are:

<i>Returns</i>	<i>Probability in X</i>	<i>Probability in Y</i>
15%	0.1	0.2
18%	0.3	0.4
21%	0.2	0.1
24%	0.4	0.3

- a) Evaluate the expected returns from both the projects and the risks associated with these returns. **(12 marks)**
- b) Which project will you invest in? Why? **(4 marks)**
- c) If the investor plans to invest 70% of the available funds in Project X and 30% in Project Y, find the risk and return of the portfolio when the correlation coefficient between the returns of the project is +1.0. **(4 marks)**

21. Case Study (Compulsory)

(1 x 20 = 20)

Lakeside Ltd, a UK-based manufacturing company, is considering expanding its operations by establishing a subsidiary in US. The subsidiary would require an initial investment of \$15 million, including \$3 million for working capital. The company has identified a suitable location and existing facilities for the subsidiary, which would enable quick commencement of production.

The initial payment of \$14 million would be required upfront, with the remaining \$1 million needed at the end of the first year. The Working capital is invested immediately and recouped at the end of the project. Production and sales are forecasted to be 40,000 units in the first year and 80,000 units per year thereafter.

In the first year, the unit price, unit variable cost, and total fixed costs are expected to be \$120, \$60, and \$2 million, respectively. It is anticipated that prices and costs will increase by 4% per year over the next 5 years in line with the expected inflation rate in US

Additionally, Lakeside Ltd would need to pay a fixed royalty fee of \$8 per unit to the parent company, payable at the end of each year. The company estimates that the realizable value of the fixed assets in US after 4 years would be \$18 million.

Lakeside Ltd currently exports to US, generating an after-tax net cash flow of £150,000. However, if the subsidiary is established, no production will be exported to China. The company believes that new export markets in Southeast Asia could potentially replace exports to China.

The corporate tax rate in the UK and US is 40%, payable one year in arrears. A double taxation treaty exists between the UK and US, and no double taxation is expected to arise. No withholding tax is levied on royalties payable from US to the UK.

Tax-deductible depreciation is calculated at a rate of 20% on a straight-line basis for all fixed assets.

Lakeside Ltd estimates the appropriate beta for this investment to be 1.3. The after-tax market rate of return is 11%, and the risk-free rate of interest is 6% after tax. The current spot exchange rate is US \$1.250/£1, and the pound is expected to depreciate by approximately 3% per year relative to the US dollar.

Required:

- (a) Evaluate the proposed investment from the viewpoint of Lakeside Ltd. Clearly state any assumptions made. **(14 marks)**
- (b) Discuss what further information and analysis might be useful in the evaluation of this project. **(6 marks)**
