BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSC **SEMESTER : VI**
BRANCH: QEDS **SESSION : SP/2024**

SUBJECT: ED321 FINANCIAL ECONOMICS

TIME: 3 Hours **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	The winner of a racing competition can choose between five alternatives 1. $10,000 now 2. $180,000 at the end of five years 3. $11,400 forever 4. $6500 next year and thereafter increasing at the rate of 5% forever. If the interest rate is 12%, which is the most valuable prize?	[5]	1	2
Q.1(b)	Explain term structure of interest rates and describe the well-known hypotheses used for explaining an observed term structure.	[5]	1	1
Q.2(a)	Explain the arbitrage pricing model and explain how it differs from the Capital Asset Pricing Model (CAPM).	[5]	2	4
Q.2(b)	The estimates of standard deviation and correlation for two stocks are provided in the table below:	[5]	2	3

			Correlation with stock	
Stock	Return	Standard deviation	A	B
A	15	32	1.00	-0.9
B	24	16	-0.9	1.00

If we construct a portfolio equally weighted in A and B, find out the portfolio's standard deviation and expected return.

Q.3(a)	Explain how stock price is generally determined in a one stage binomial tree model.	[5]	3	2
Q.3(b)	Trader A enters into a forward contract to buy an asset for $1,000 in one year. Trader B buys a call option to buy the asset for $1,000 in one year. The cost of the option is $100. What is the difference between the two positions? Explain by diagrammatically showing the profit as a function of the price of the asset in one year for the two traders.	[5]	3	3
Q.4(a)	With Corporate taxes and bankruptcy costs, how is the optimal amount of borrowing of a firm determined? Explain with reasons.	[5]	4	4
Q.4(b)	Digi Corp. is comparing between two different capital structures. Plan 1 consists of 800 outstanding shares of stocks and $9000 in debt. Plan 2 would result in 700 outstanding shares of stock and $13500 in debt. Interest rate on debt is 10%. Assuming EBIT=$8000 and ignoring taxes, compare both these plans to an all-equity firm, which has 1000 outstanding shares. Which of them has the highest Earnings per share? What are the break even levels of EBIT for each plan compared to the all equity firm. How do the break even levels change under the existence of a corporate tax rate of 40%?	[5]	4	5
Q.5(a)	"A portfolio manager will offer the same risky portfolio to all clients irrespective of their degree of risk aversion". Explain.	[5]	5	5
Q.5(b)	Explain the applicability of rational expectations in the efficient market hypothesis model.	[5]	5	5

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