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Topic Quantative Methods

IFT strongly recommends that you do all the practice problems in the curriculum, but if you are severely time constrained do at least the following.

Reading	Question #	Concept Tested
Fintech	PP1	Fintech
	PP2	Big data
	PP3	Machine learning
	PP4	Text analytics
	PP5	Robo- advisory services
	PP6	Risk analysis
	PP7	Algorithmic trading
	PP8	DLT
	PP9	DLT
Correlation and Regression	PP5 - PP10	
	PP5	Coefficient of determination = R-squared
	PP6	Effect of deleting observations on R-Squared and SEE
	PP7	Correlation coefficient = Multiple R
	PP8	F - Stat formula
	PP9	Predicting independent variable using regression equation
	PP10	Interpreting p-values
	PP11 - PP16	
	PP11	Testing the significance of the correlation coefficient
	PP12	Time series vs cross sectional data
	PP13	Predicting independent variable using regression equation
	PP14	Interpreting R-squared
	PP15	Interpreting SEE
	PP16	Interpreting t-stats
	PP17 - PP26	
	PP17	Scatter plots
	PP18	Calculating sample covariance
	PP19	Calculating sample correlation
PP20	Interpreting regression results	
PP21	Dependent vs independent variable	
PP22	Degrees of freedom	
PP23	Calculating confidence intervals	
PP24	Interpreting t-stats	
PP25	Predicting independent variable using regression equation	
PP26	Calculating F-stat	
Multiple Regression and Machine Learning	PP17 - PP22	
	PP17	Predicting independent variable using regression equation
	PP18	Confidence interval for the regression coefficient
	PP19	Testing the significance of the correlation coefficient
	PP20	Interpreting multiple R-squared
	PP21	Problems in regression analysis - Heteroskedasticity
	PP22	Model misspecification issues - omitted variable
	PP29 - PP36	
	PP29	Calculating F-statistic
	PP30	Qualitative independent variables - interpreting coefficients
	PP31	Problems in regression analysis - multicollinearity
	PP32	Qualitative independent variables - setting up the model
	PP33	Problems in regression analysis - Heteroskedasticity
	PP34	Effects of positive serial correlation
	PP35	Durbin-Watson statistic
	PP36	Qualitative dependent variables - when to use probit and logit models
	PP37 - PP45	
	PP37	Testing the significance of the correlation coefficient
PP38	Interpreting p-values	
PP39	Interpreting p-values	
PP40	Predicting independent variable using regression equation	
PP41	R-squared and adjusted R-squared	
PP42	Interpreting F-stat	
PP43	Interpreting F-stat	
PP44	Assumptions of multiple regression	
PP45	Adjusted R-squared	

	Example 17 1 2 3 4 5 6	Major types of machine learning Classification problem vs regression problem Penalized regression CART Neural networks Clustering Dimension reduction
Time-Series Analysis	PP20 - PP26 PP20 PP21 PP22 PP23 PP24 PP25 PP26	Forecasting using a linear trend model Forecasting using a log linear trend model Interpreting the Durbin–Watson statistic Covariance stationary time series Forecasting using the chain rule Interpreting autocorrelations in an AR model Mean-reverting level
	PP27 - PP35 PP27 PP28 PP29 PP30 PP31 PP32 PP33 PP34 PP35	Properties of random walk & covariance stationary time series Covariance stationary time series Unit root Dickey–Fuller test Interpreting autocorrelations in an AR model Forecasting using a first differenced model ARCH Working with two time series Selecting an appropriate time series model
Simulations	Online assessment - Jason Yang Case Scenario Q1 Q2 Q3 Q4 Q5 Q6	To compare scenario analysis with simulations To define prob distribution for the variables How to treat correlation across variables? To define the probability distribution for the simulation variables To explain the results of a simulation What are the issues in simulation?



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Topic Economics

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Reading	Question #	Concept Tested
Currency Exchange Rates: Determination and Forecasting	PP6 - PP12 PP6 PP7 PP8 PP9 PP10 PP11 PP12	Uncovered interest rate parity Flow supply/demand channel Portfolio balance approach Mundell-Fleming model Portfolio- balance approach Capital control and central bank intervention Warning signs of a currency crisis
	PP13 - PP20 PP13 PP14 PP15 PP16 PP17 PP18 PP19 PP20	Bid-offer spread Factors affecting bid-offer spread Triangular arbitrage profit Forward contract - mark to market Covered interest rate parity interpretation Calculating forward points using covered interest rate parity International parity conditions International parity conditions
Economic Growth and the Investment Decision	PP7 - PP15 PP7 PP8 PP9 PP10 PP11 PP12 PP13 PP14 PP15	Factors favoring and limiting economic growth Capital deepening investment and technological progress Sustainable growth rate of the economy Potential GDP Capital deepening investment and technological progress Demographic factors Natural resources Demographics, immigration, and labor force participation Convergence hypotheses
Economics of Regulation	PP7 - PP13 PP7 PP8 PP9 PP10 PP11 PP12 PP13	Classification of regulators SRO 'Unintended' implementation cost Regulatory tools Regulatory competition Regulation of commerce Regulatory tools



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Topic Alternative Investments

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Reading	Question #	Concept Tested	
Private Real Estate Investments	PP1 - PP12		
	PP1	Interpreting NOI	
	PP2	Real estate valuation - misc items	
	PP3	Calculating growth rate	
	PP4	Discounted cash flow method	
	PP5	Direct capitalization method	
	PP6	Sales comparison approach	
	PP7	Due diligence	
	PP8	All cash purchase v/s used of debt	
	PP9	Calculating maximum loan amount	
	PP10	Benefits of private equity real estate investments	
	PP11	Sources of risk for real estate investments	
PP12	Real estate investment: Basic forms		
Publicly Traded Real Estate Securities	PP1 - PP6		
	PP1	REITs v/s REOCs	
	PP2	Net asset value approach	
	PP3	Relative valuation using property subsector average P/FFO multiple	
	PP4	Discounted cash flow valuation using a two- step dividend model	
	PP5	Relative valuation using property subsector average P/AFFO multiple	
	PP6	Principal risk factors for REITs	
	PP7 - PP12		
	PP7	Investment characteristics of REITs	
	PP8	Disadvantages of REITs	
	PP9	Economic value determinants for different types of REITs	
	PP10	Adjusted funds from operations (AFFO)	
PP11	Relative value approach - P/FFO multiple		
PP12	Discounted cash flow approach - 2 step model		
Private Equity Valuation	PP7 - PP12		
	PP7	Valuation characteristics of buyout vs. venture capital investments	
	PP8	Alignment of interests	
	PP9	Evaluating fund performance	
	PP10	Evaluating fund performance	
	PP11	Exit routes	
	PP12	Valuation issues in buyout and venture capital transactions	
	PP13 - PP18		
	PP13	Valuation characteristics of buyout vs. venture capital investments	
	PP14	Value creation in buyout firms	
	PP15	Distribution waterfall	
	PP16	Calculating total value to paid- in capital (TVPI)	
	PP17	Calculating carried interest	
	PP18	Evaluating fund performance	
	Commodity and Commodity Derivatives: An Introduction	PP1 - PP8	
		PP1	Commodity futures market participants
		PP2	Characteristics of commodity sectors
		PP3	Valuation of commodities
PP4		Backwardation	
PP5		Theories explaining futures returns	
PP6		Roll returns	
PP7		Calculating total return	
PP8	Total return swap		