FLASH QUESTIONS

There is more than we saw, just concentrate on point already learned.
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Chapter 1 : Intro

Forward

1. What is a forward contract ?
2. Witch difference with a future contract ?
3. How to calculate a forward price ?

Option

1. What is a Call ? A Put ?
2. Can you represent graphically a Call ? a Put ?
3. Can you represent graphically a Call (strike K) + a Put (strike K) ? a Call (strike K) - a Put (strike K) ? What do you see ?

Structured Product

1. What include a structured product ?
2. What is the scheme of a structuration ?

Chapter 2 : Futures & OTC

Market place vs OTC

1. What are the key points of the standardized products ?
2. What are the key point of the OTC products ?

Chapter 3 : Swap

Swap

1. What is the price of swap at the beginning ? (fixed rate = market rate)
2. I have to borrow in 1 year for 10 years but I fear that interest rates rise. What can I do ?

Cap, Floor & Swaption

1. You have invest in a FRN (Floating Rate Note) paying Euribor 12M annually, how can you hedge your risk ?
2. What have you done if you buy a Cap 4,5% for 5 years and sell a Floor at 4,5% at 5 years ?
3. Your company will perhaps succeed to a auction to build a highway in 1 year. In this hypothesis, you will have to borrow 200 M euros during 10 years. How can you hedge the risk of a increase in the interests rates ?

Chapter 4 : Forward

Capitalisation and actualisation, short selling

1. What is the value of 1 euro in 10 years ?
2. What is the value today of 1euro receive in 10 years ?
3. How to convert a annual rate on a monthly rate ?
4. What is “short selling” ?

Forward, FRA

1. If the CAC40 = 1000, actuarial interest rate of 2 years is 3.00%, no dividends, then what will be the forward at 2 years of the CAC40 ?
2. Are the forward interest rate certain to be realized ?

Chapter 5 : Interest rate

ZC

1. What is a zero coupon rate ?
2. How to calculate a discount factor from a ZC ?

Boostrap method

1. What is the boostrap method ?
2. How to calculate a ZC curve from compounded rates ?

Forward

1. If ZC(1y) = 2% and ZC(2y) = 3%, what is the ZC(1y in 1y) ?

Chapter 6 : Option market

Option market

1. What is the intrinsic value of a Out of The Money Call ?
2. What is the change in his time value if the underlying rise ?
3. Is a Put In, At or Out of the money if the spot is higher than the strike ?

Chapter 7 : Property

Option property

1. What is a American option ?
2. What is the impact of a rise of the volatility on the price of a Put ?
3. What is the impact of a rise of the strike on the price of a Call ?

Chapter 8 : Strategies

Strategies

1. Graph the four profiles.
2. What is the graphical representation of : short a put X_1 and long call X_2 ?

Greeks

1. What is the delta of call deep out, at or deep in the money ?
2. In witch range the delta of put evolves ?
3. Graph the delta of a call (X = Underlying, Y = delta).
4. What is the differences for a very short period of time of a portfolio long of one underlying and a portfolio long of 2 call with a delta of 50% each ?

Chapter 9 : Cox & Delta

Valuation and Delta

1. What is the backwardation valuation method ?
2. Describe the risk neutral valuation.
3. The underlying rise with time and you are long a call, what have you to do to be "delta hedged" ?

Chapter 10 : Stock behaviour

Stock behaviour

1. What is the a Monte Carlo simulation ?
2. Why are we interested in the law of $\Delta S/S$ despite of the law of S ?
3. What is the law of $\Delta S/S$?
4. What is the stochastic process of ln S ?

Chapter 11 : B&S Model

Stock behaviour

1. By discretisation, what is the value of S_T as a function of S_0 ?
2. If the volatility of S is 10% for 1 year, the distribution of S in two years have fatter tails than the distribution of S in one years ?
3. Which distribution of S or S' can be considered more risky : S have volatility of 25% and mature in 1 year, S' have a volatility of 5% and mature in 5 years ?

B&S

1. What is the B&S formulas ? How to calculate the r ?
2. Is there only one volatility no matter the strike or the maturity ?

Chapter 12 : Monte Carlo – Generalisation of B&S

Monte Carlo

1. How to generate random normal value ?
2. What is the methodology of the Monte Carlo option valuation ?

Generalisation of B&S

1. What is the price of a Call EUR / Put USD maturing in 6 month, strike = spot = 1.20, volatility = 10% per annum, rate EUR = rate USD = 2% ?
2. How to price a floor ?

Chapter 13 : Greeks

Delta

1. How to be delta neutral if I just buy a Call EUR/ Put USD ATMF for EUR 1 000 000 ?
2. Why is equivalent to buy a Call of strike 100 maturing in 3 weeks and to buy the underlying asset valued at 200 ?
3. What is the delta of a position long Call ATMF and long Put ATMF ?

Gamma

1. Are you gamma positive or negative if you have buy the Call ATMF and sell the Put ATMF ?
2. The market is waiting for a important economic figure, traders are clearly dividend in two camps and have taken huge positions. Witch book long or short gamma will earn money ?

Chapter 14 : Exotics options

Second generation

1. What are the pros ?
2. The cons ?

Barrier option

1. What is less risky : a call up & out or a call down & out ?
2. What is cheaper : a call up & in or a call down & in ?
3. A customer want to be totally hedged if the underlying rise over 100, don't think we will see 80 and accept to loose the fall in this case; the strategy must costless.