Vrije Universiteit Amsterdam
Faculteit der Economische Wetenschappen en Bedrijfskunde
Versie B

Tentamen:	Financiering 2.5
Opleiding:	Bachelorsopleiding Economie periode *5*
Vakcode:	60241010
Docent:	mw. dr. J. Koëter-Kant
Datum:	30 mei 2007
Tijd:	*08:45* uur
Tij dsduur:	2 uur
Onderdelen:	24 multiple choice opgaven 3 open vragen
Waardering:	Iedere multiple choice vraag telt even zwaar mee. U start op 100 punten. Voor elk fout antwoord, worden *5* punten afgetrokken. Voor de open vragen kunt u in totaal *25* punten behalen. Het cijfer wordt bepaald door het resterende aantal punten van de multiple choice opgaven op te tellen bij de punten die behaald zijn bij de open vragen en dan door 12.5 te delen mits dit resultaat hoger is dan 1, anders 1.
Uitslag:	De uitslag van het tentamen wordt uiterlijk donderdag 14juni 2007 bekend gemaakt, inclusief het eventueel toegekende hele of halve bonuspunt
Rekenmachine	Grafische rekenmachine is toegestaan, maak het geheugen leeg.
Formules.	Tabel met cumulatieve normale verdeling is toegevoegd
Inzage:	Voor eventuele vragen met betrekking tot het tentamen en het toegekende cijfer is er inzage op l5 juni van 14:00-15:00 uur.
Opmerkingen:	Verdeel uw tijd overeenkomstig het aantal te behalen punten.

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Bij de rekenopgaven dient u het antwoord te kiezen dat het dichtst (in absolute zin) ligt bij het juiste antwoord. bijvoorbeeld als uw antwoord *6.53* is, en de mogelijkheden zijn
(a) *5* (b) 6 (c) 7 (d) 8 . dan is het juiste antwoord (7). De precieze antwoorden staan veelal niet tussen de keuzemogeljkheden!

Veel succes toegewenst:

Naam: Ç~ .~ ~*e* k~ *e*~ *c*~ Studenten nr.: ~ ~ Q ~

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Veel succes toegewenst!

Use the information for the questions (3) below.

You own a small manufacturing plant that currently generates revenues of $2 million per year. Next year, based upon a decision on a long-term government contract, your revenues will either increase by 20% or decrease by 25%, with equal probability, and stay at that level as long as you operate the plant. Other costs run $1.6 million dollars per year. You can seil the plant at any time to a large conglomerate for $5 million and your cost of capital (discount rate) is 10%.

1) If you are awarded the government contract and your sales increase by 20%, then the value of your plant will be closest to:
   A) $5 million
   B) $8 million
   C) $0
   D) $4 million

2) If you are not awarded the government contract and your sales decrease by 25%, then the value of your plant will be closest to:
   A) -$1 million
   B) $5million
   C) $8 million
   D) $0

3) Given the embedded option to sell the plant, the value of your plant will be closest to:
   A) $5.0 million
   B) $4.0 million
   C) $6.5 million
   D) $8.0 million

4) The risk that the firm will not have, or be able to raise, the cash required to meet the n-iargin calls on its hedges is called
   A) liquidity risk.
   B) basis risk.
   C) commodity price risk.
   D) speculation risk.

5) Which of the following statements regarding futures contracts is false?
   A) Both the buyer and the seller can get out of the contract at any time by selling it to a third party at the current market price.
   B) Futures prices are not prices that are paid today. Rather, they are prices agreed to today, to be paid in the future.
   C) Futures contracts are traded anonymously on an exchange at a publicly observed market price and are generally very illiquid.
   D) Traders are required to post collateral, called margin, when buying or selling commodities using futures contracts.

6) A currency forward contract specifies all of the following except:
   A) The amount of currency to exchange
   B) The spot exchange rate
   C) The delivery date on which the exchange will take place
   D) The currencies to be exchanged

7) Which of the following statements is false?
   A) Corporations use interest rate swaps routinely to alter their exposure to interest rate fluctuations.
   B) The value of a swap, while initially zero, will fluctuate over time as interest rates change.
   C) An interest rate that adjusts to current market conditions is called a floating rate.
   D) When interest rates rise, the swap's value will rise for the party receiving the fixed rate; conversely, it will fail for the party paying the fixed rate.

Use the information for the question below.

You are a U.S. Investor who is trying to calculate the present value of £5 million cash inflow that will occur one year in the future. The spot exchange rate is S = \$1.8839/£ and the forward rate is F_1 = \$1.8862/£. The appropriate dollar discount rate for this cash flow is 5.32% and the appropriate £ discount rate is 5.24%.

8) The present value of the £5 million cash inflow computed by first discounting the £s and then converting into dollars is closest to:
   A) \$8,961,420
   B) \$8,950,495
   C) \$8,954,615
   D) \$8,943,695

9) A call option has an exercise price of \$100. At the final exercise date, the stock price could be either \$50 or \$150. Which investment would combine to give the same payoff as the stock?
   A) Lend PV of \$50 and buy two calls -
   B) Lend PV of \$50 and sell two calls
   C) Borrow \$50 and buy two calls
   D) Borrow \$50 and sell two calls

10) The spot C$/US dollar exchange rate is 1.33/1$. The 3-month forward rate is 1.3385 C$/US$. What is the C$'s forward premium (or discount) on the US dollar, expressed as au annual rate?
   A) 0.83% premium
   B) 2.1% discount.
   C) 2.1% premium.
   D) 1.3% discount.

11) The opportunity to invest in a project can be thought of as a three-year real option, which is worth $500 million with an exercise price of $800 million. Calculate the value of the option given that, N(di) =0. 3 and N(d2)=0.15. Assume that the interest is 6% per year.?
   A) $150 million.
   B) $49.25 million.
   C) Zero.
   D) None of the above.

12) Using options to reduce risk is called?
   A) Speculation.
   B) A naked position.
   C) Hedging.
   D) A covered position.

13) The payoff to the holder of a put option is given by:
   A) *P= max(EX - S,* 0)
   B) P= max(S - EX, 0)
   C) P=min(S-EX,0)
   D) *P = max(EX,* 0)

Use the figure for the question below.

14) This graph depicts the payoffs of a
   A) a short position in a put option at expiration.
   B) short position in a call option at expiration.
   C) a long position in a put option at expiration.
   D) a long position in a call option at expiration.

1 5) Which of the following statements is false?

A) The intrinsic value of an option is the value it would have if it expired immediately.
B) A European option cannot be worth less than its American counterpart.
C) Put options increase in value as the stock price fails.
D) A put option cannot be worth more than its strike price.

16) Luther Industries is currently trading for $27 per share. The stock pays no dividends. A one-year European put option on Luther with a strike price of $30 is currently trading for $260. If the risk-free interest rate is 6% per year, then the price of a one-year European cali option on Luther with a strike price of $30 will be closest to:

A) $1.30
B) $7.10
C) $260
D) $195

17) Consider the following equation:

"Black en scholes"

In this equation, the term sigma represents

A) the number of days to expiration.
B) the number of years to expiration.
C) the expected return on the stock.
D) the annual volatility of the stock.

Use the information for the question below.

The current price of KD Industries stock is $20. In the next year the stock price will either go up by 20% or go down by 20%. KD pays no dividends. The one year risk-free rate is 5% and will remain constant.

18) Using the binomial pricing model, the calculated price of a one-year call option on KD stock with a strike price of $20 is closest to:

A) $2.40
B) $2.00
C) $2.15
D) $1.45

19) Which of the following statements is false?

A) In both the Binomial and Black-Scholes Pricing Models, we need to know the risk neutral probability of each possible future stock price to calculate the option price.
B) In the real world, investors are risk averse. Thus, the expected return of a typical stock includes a positive risk premium to compensate investors for risk.
C) Because no assumption on the risk preferences of investors is necessary to calculate the option price using either the Binomial Model or the Black-Scholes formula, the models must work for any set of preferences, including risk-neutral investors.
D) If all market participants were risk neutral, then all financial assets (including options) would have the same cost of capital—the risk free rate of interest.

20) You pay $3.25 *for a* call option on Luther Industries that expires in three months with a strike price of $40.00. Three months later, at expiration, Luther Industries is trading at $41.00 per share. Your profit per share on this transaction is closest to?
   A) -$1.00
   B) $1,00
   C) -$2.25
   D) $225

21) Suppose an investor buys one share of stock and a put option on the stock and simultaneously sells a call option on the stock with the same exercise price. What will be the value of his investment on the final exercise date?
   A) Above the exercise price if the stock price rises and below the exercise price if it falls.
   B) Equal to the exercise price regardless of the stock price.
   C) Equal to zero regardless of the stock price.
   D) Below the exercise price if the stock price rises and above if it falls.

22) Which of the following statements is false?
   A) In particular, because real options allow a decision maker to choose the most attractive alternative after new information has been learned, the presence of real options adds value to an investment Opportunity.
   B) To make an investment decision correctly, the value of embedded real options must be included in the decision-making process.
   C) A key distinction between a real option and a financial option is that real options, and the underlying assets on which they are based, are often traded in competitive markets.
   D) We can compute the value of the real option by comparing the expected profit without the real option to the value with the option.

23) Which of the following is not a real option?
   A) A stock option
   B) An abandonment option
   C) An investment timing option
   D) An expansion option

24) Which of the following statements is false?
   A) If there is a lot of uncertainty, the benefit of waiting is diminished.
   B) In the real option context, the dividends correspond to any value from the investment that we give up by waiting.
   C) By delaying an investment, we can base our decision on additional information.
   D) Given the option to wait, an investment that currently has a negative NPV can have a positive value.

Open Vragen

Gebruik de opengelaten ruimte onder de open vragen voor het beantwoorden van deze vragen (ie mag in het Nederlands antwoorden). Kladpapier mag gebruikt worden, maar lever dit niet in! Ga door tot je "einde tentamen" ziet.

1) In December 2005, the spot exchange rate for the British Pound was $1.7188/£. Suppose that at the same time the on-year interest rate in the United States was 4.85% and the oneyear interest rate in Great Britain was 3.15%. Based on these rates, what forward exchange rate is consistent with no arbitrage

(5 punten)

2) Your oil refinery will need to buy 250,000 barrels of crude oil in one week and it is worried about crude oil prices. Suppose you go long 250 crude oil futures contracts, each for 1000 barrels of crude oil, at the current futures price of $68 per barrel. Suppose futures prices change each day over the next week as foliows:

Day	1	2	3	4	S
Futures Price	65	65.5			

What is the daily *and* cumulative mark to market profit or loss (in dollars) that you will have on each of the next five days?

(7.5 punten)

3) De aandelenprijs van Tom'n Go N.V. verandert slechts eenmaal per zes maanden. De prijs van het aandeel gaat omhoog met 25% of omlaag met 20%. De huidige prijs van het aandeel is € 60,-. De risicovrije rente is *5%* per jaar.

a. Met behulp van een binomiale boom bereken de prijs van een Amerikaans put optie contract met een uitoefenprijs "exercise price" van € 65,- en een looptijd van één jaar. Gebruik de "continuously compounded interest rate" en rond je antwoorden af op 2 decimalen.

b. Zou je deze put voor het einde van het contract uitoefenen. Zo ja, wanneer?

Einde tentamen