University of Texas at Austin

Quiz 22

Early exercise. Moneyness. Forward binomial trees (multi period).

Please, provide **complete** solution(s) to the following problem(s):

Problem 22.1. (5 points) *Source: Sample MFE Problem Set (Intro); Problem #46.*

Determine which of the following statements about options is **true**:
(A) Naked writing is the practice of buying options without taking an offsetting position in the underlying asset.
(B) A covered call involves taking a long position in an asset together with a written call on the same asset.
(C) An American style option can only be exercised during specified periods, but not for the entire life of the option.
(D) A Bermudan style option allows the buyer the right to exercise at any time during the life of the option.
(E) An in-the-money option is one which would have a positive profit if exercised immediately

Problem 22.2. (10 points)
The current stock price of a continuous-dividend-paying stock is 100 per share. Its volatility is 0.25 and its dividend yield is 0.01.
Assume that the continuously compounded risk-free interest rate equals 0.04.
(a) (3 points) Construct a two-period forward binomial tree for the above stock modeling the stock price evolution over the following half-year.
(b) (2 points) Consider a half-year, $95-strike call option on the stock. What is the moneyness of this option at the *up* and *down* nodes?
(c) (5 points) Assume that the above option is European. What is its price?

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