COMP 7802_1B
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1) a = March 31, 2007
b = April 29, 2007
c
d = 10,000
e = 10,094,9564
f = 30,603,2679
g = 20808.8514
h = 1148.5608
i = -8941.5066

2) a. EDATE (Start_Date, A21*12) (Because of Annual)
b. EDATE (Start_Date, A31*6) (Semi Annual)
c.

2). a. WORKDAY(EDATE(Start_Date, A21*12), ', Holiday!$A$1:$A$56)

b. WORKDAY(EDATE(Start_Date, A31*6), 0, Holiday!$A$1:$A$56)

c. Notional_Amount * Pay_Fixed (Annual)

e. Notional_Amount * Previous_LIBOR_Fixing * 0.5 (Semi annual)

d. 2,500,000
e. Notional_Amount * Previous_LIBOR_Fixing * 0.5
f. (Notional_Amount * Pay_Fixed) * VLookup(B21, discount Factor !A:B, 2, FALSE)
g. -76,173,943
h. 78,033,435
i. 1,859,492,

3. a. Δt = OPTION life / Steps

= 0,08333

$DF = e^{(-r\Delta t)}$

= 0.99792

$u = e^{(vol \times \sqrt{\Delta t})}$

= 1,05638

$d = 1/u$

= 0,94663

$p = \frac{e^{(r\Delta t)} - d}{u - d}$

= 0,505291

b. V_1 = MAX (S-X, 0)

= 9,81

V_2 = 6,04

V_3 = 2,66

V_4 = 0

V_5 = DF x (p V_1 + (1-p) x V_2)

= 7,93

V_6 = 4,36

V_7 = 1,34

V_8 = 6,15

V_9 = 2,86

V_{10} = 4,51

Theoretical Price = $P + S_0 - Xe^{-rt}$

= 4,51

3. c) $d_1 = \dfrac{0.1503 + (0.025 + \frac{0.14^2}{2}) \times 0.25}{0.14\sqrt{0.25}}$

$= 0.1637$

$d_2 = d_1 - 0.14\sqrt{0.25}$

$= 0.068625$

d) $N(d_1) = 0.434984$

$N(d_2) = 0.472614$

f). For given Period to option expiry a binomial Model will converge to Black-Scholes Model as the number of branches increases.

4.2) $X_t = LN(S_t/S_{t-1})$

$X_1 = LN(35.85/40.25)$

$= -0.115766$