University of Toronto
At Mississauga



Business Finance II

**Sample Final Exam**

**Question 1:**

A non dividend-paying [illegible] and is expected to be either up by 20% or down by 15% in 6 months. The annual r[illegible]

Find the value of a call [illegible]h a 6-month time to expiry and an exercise price of $55 using the risk neutral v[illegible]

a) Calculate the value of a $55 put using Put-Call Parity.
b) Suppose the market price of a 6 month put with an exercise price of $55 is $1. Describe in detail an arbitrage opportunity as a result of the mispricing of the put.



**Question 2:**



Today is April 7, 2024 and your firm is a jewellery manufacturer that needs 1,000 ounces of gold in October for the Fall production run. You would like to lock in your costs today, because you're concerned that gold prices might go up between now and October. The current spot price of gold is $915.50 per ounce, and an October Futures contract has a gold price of $937.40 per ounce. Each gold Futures contracts is 100 ounces large.



a) How would you use gold futures contracts to hedge your risk exposure? What price would you effectively be locking in?
b) Suppose gold prices are $780 per ounce in October. What is the profit or loss on your futures position? Explain how your futures position has eliminated your exposure to price risk in the gold market.



**Question 3:**

A company has the following Equity account:

| | |
|---|---|
| Common Stock ($1 Par Value): | $385,000 |
| Capital Surplus: | $846,000 |
| Retained Earnings: | $3,720,000 |
| Total Owners Equity: | $4,951,000 |

(Reminder: Capital surplus is capital paid in excess of par value, which is $1 in this problem).

a) The company decides to have a four-for-one stock split. Calculate the number of shares in issue after the stock split. Show what the Equity account will look like after the stock split.
b) The firm declares a $0.75 per share cash dividend on the new (post-split) shares. Show what the Equity account will look like after the dividend.
c) The dividend declared in (b) represents an increase of 10% over last year's dividend on the presplit stock. What was last year's dividend per share?

**Question 4:**

Assume an MM no tax world and consider an unlevered firm whose cost of equity is 13.5%. Suppose this firm has annual expected EBIT of $285,000 in perpetuity. The firm has decided to borrow $700,000 at an interest rate of 8% to finance a project that is expected to contribute $105,000 to the annual EBIT, in perpetuity. The firm has 500,000 shares outstanding.



a) Find the current sh[illegible]king on the Debt and the new project)
b) Find the earnings p[illegible]the EPS once the firm proceeds with the new project
c) Find the NPV of the[illegible]
d) Find the cost of eq[illegible]borrowed and the project is launched
e) Find the new share[illegible]is announced

**Question 5:**

A call with a strike price of $50 costs $2. A put with a strike price of $45 costs $3. Both the call and the put are on the same stock and have the same time to maturity.



a) Draw the payoff diagram for a strangle made from these two options (made when 1 of each option is purchased).
b) Calculate the Breakeven Stock Price(s) at Maturity.



**Question 6:**



Sweet Cola Corp. (SCC) is bidding to take over Salty Dog Pretzels (SDP). SCC has 3,000 shares outstanding, selling at $50 per share. SDP has 2,000 shares outstanding, selling at $17.50 per share. SCC estimates the synergies from the merger to be $10,000.



a) If SDP can be acquired for $20 cash per share, what is the NPV of the merger to SCC?
b) The market is semi-strong efficient. What will SCC sell for when the market learns that it plans to acquire SDP for $20 a share? What will SDP sell for? What is the percentage gain per share for each firm? What fraction of the merger synergies do SCC's shareholders receive? What fraction goes to SDP's shareholders?
c) Now suppose that the merger takes place through an exchange of stock instead. Based on the pre-merger prices of the firms, SCC issues 0.4 of its shares for every SDP share. What will be the share price of the merged firm?
d) What is the NPV of the merger to SCC when it issues an exchange of stock? What is the percentage gain per share for each firm? What fraction of the economic gain do SCC's shareholder receive?
e) Would the shareholders of SCC prefer the cash transaction or the share exchange? Why? What about the shareholders of SDP?
f) Calculate the share exchange equivalent to the cash offer in part (a)