INSTRUCTIONS TO CANDIDATES:

1. This question paper consists of TEN numbered pages, including this page.

2. There are THREE sections. Section A comprises THREE compulsory questions.
   
   Section B comprises FIVE questions, you must answer any TWO (2) of the FIVE questions.
   
   Section C comprises SEVEN questions, you must answer any TWO (2) of the SEVEN questions.

3. Show all workings.

4. A formula sheet and a standard normal distribution table are attached.
SECTION A – 80 MARKS

ANSWER ALL QUESTIONS

Question 1 40 Marks: 36 Minutes

Covenant Financial Services Limited (CFSL) is an African financial services firm specializing in bridging finance. CFSL is listed on Zambia’s Lusaka Stock Exchange (LSE) and is expecting a high growth rate in earnings due to a rapidly growing market share.

Extract from the 2016 Income statement

<table>
<thead>
<tr>
<th>Item</th>
<th>2016 Income Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$ 000 000</td>
</tr>
<tr>
<td>Operating costs</td>
<td>12</td>
</tr>
<tr>
<td>Interest</td>
<td>8</td>
</tr>
<tr>
<td>Dividends</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Extract from the 2016 Balance Sheet

<table>
<thead>
<tr>
<th>Item</th>
<th>2016 Balance Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>$ 000 000</td>
</tr>
<tr>
<td>Net property, plant, and equipment</td>
<td>9</td>
</tr>
<tr>
<td>Total assets</td>
<td>11</td>
</tr>
<tr>
<td>Current liabilities (all non-interest-bearing)</td>
<td>20</td>
</tr>
<tr>
<td>Long term debt</td>
<td>6</td>
</tr>
<tr>
<td>Ordinary Share Capital (@$0.5 each)</td>
<td>4</td>
</tr>
<tr>
<td>Total liabilities and equity</td>
<td>10</td>
</tr>
</tbody>
</table>

You expect CFSL to experience a 3-year high growth phase during which EBIT, revenues, capital expenditure and depreciation will grow at 25%. Throughout the entire 3-year high growth phase, net working capital requirements as a per cent of revenues will remain at the current level. The firm’s beta will be 1.5. After the 3-year high growth phase, CFSL’s growth rate in earnings and revenues will slow down to 5%. Capital expenditure and depreciation will offset each other. Net working capital requirements as a per cent of revenues will be 25%. The firm’s beta will be 1.

Additional information

Operating costs include a depreciation amount of $ 400 000 and the applicable tax rate is 40%.

Net property, plant, and equipment in 2015 was $ 600 000.

The applicable risk free rate, expected market return, optimal debt ratio and pre-tax cost of debt for both the high growth and stable growth phases are 5%, 10%, 50% and 10% respectively.

Required:

(a) Calculate the value of CFSL today using the Free Cash flow to the Firm approach [36 marks]

(b) Based on CFSL’s optimal debt ratio, determine the price per share today. State whether the share is correctly valued assuming that CFSL’s price on the LSE is $2.50 per share. [4 marks]
Question 2  20 Marks [18 Minutes]

You are the financial manager for NWeb, a South African internet service provider. As part of your company’s strategy to expand its footprint in Africa you are investigating the possibility of acquiring Super Eagle, a Nigerian internet portal business serving the West Africa region. In June 2016, the firm’s existing operations generated Free Cash Flow to Equity of $87 million per annum and you estimate that its existing internet portal business has a sustainable growth rate of 4% indefinitely. You also believe, however, that the business has tremendous growth potential as a portal and electronic marketplace. This market is a small one now, but could potentially be much larger in five or ten years. If the online retail market in West Africa expands sooner than expected, it is assumed that Super Eagle, as one of the few recognized names in the market, will be able to parlay its brand name and the visitors to its portal to establish competitive advantages. In more specific terms, assume that Super Eagle has the option to enter the internet retailing business in West Africa in the next five years. If the online retail market in West Africa expands beyond this point in time, it is assumed that there will be other potential entrants into this market and that Super Eagle will have no competitive advantages and hence no good reason for entering this market.

There is substantial uncertainty about future growth in online retailing in West Africa and the overall performance of the Nigerian economy. If the economy boom’s and the online market grows faster than expected over the next 5 years, Super Eagle might be able to create value from entering this market. Due to the uncertainty regarding the future growth in this market you estimate that the standard deviation of the expected present value of the cash flows generated from entering the online retail market at 50%. The cost of entering the online retail market is expected to be $1 billion and, based on current expectations, the present value of the cash flows that would be generated by entering this business today is only $500 million. Five-year Treasury bonds in South Africa, Nigeria and the United States are 9.8%, 11.2% and 5.5% respectively. Super Eagle’s weighted average cost of capital is 12%, and you calculate that shareholders’ required rate of return on the existing business is 16%.

What is the maximum amount you would be prepared to pay for Super Eagle (show all workings)?

Question 3  20 Marks [18 Minutes]

You are a 50% partner in Edendale Electronics which you started four years ago with your business partner. The business has assets worth R50 million and no debt. Treasury bills are yielding 8% per annum. The annual standard deviation of Edendale Electronics’ assets is 30%. In terms of your partnership agreement when you entered into the agreement you received an option for the first five years to sell your share of the business to your partner for R15 million rand. The partnership agreement, however, stipulates that this option can only be exercised on the last day of June and December each year. Your partner approaches you with a proposal to buy you out of the business.

What is the minimum amount you should accept for your stake in the firm? (If you cannot calculate use assume a value of 1.25)
AngloGold finds breathing room  Tuesday, 23 February 2016  Warren Dick

AngloGold Ashanti is doing what it says on the tin. The company reported results for the year ending December 2015 that saw headline earnings per share negative at US 18 cents per share largely due to the performance of non-continuing operations. But much progress was made on reducing net debt and unit costs. The company didn’t have too much of a choice. Like many others that had over-extended themselves during the good times, the company’s choices have been dictated by the state of its balance sheet – net debt at the end of 2014 stood at $3.2 billion. Last year saw a 30% reduction in this number, something made possible by a brutal assault on unit costs over the last three years, particularly in its international operations. The US dollar also played its part, reducing the reported costs (in dollars) as the local currencies in which the company operates depreciated against the greenback.

All-in sustaining costs (AISC) for 2015 across the group were 11% lower at $910/oz than they were in 2014. AISC for the company’s non-South African operations have fallen by 40% over the last three years to $786/oz in the fourth quarter of 2015. “We needed to drive our costs down so that we could have a business that makes money in bull and bear markets,” says AngloGold CEO Srinivasan Venkatkrishnan (Venkat). “This was done on three pillars: driving efficiency through procurement and business operations; 2. Revisiting mine plans for optimisation; and 3. Making portfolio changes – removing the high cost operations.” The relentless attention to costs meant that cash flow from operating activities stayed in line with 2014 despite total production (-9%) and the average gold price received (-8%) declining in 2015. The company also trimmed capital expenditure by $180 million and used the proceeds of the sale of Cripple Creek and Victor mine ($819 million) to pay down outstanding debt to the tune of $984 million.

With net debt: now within the company’s target of being within 1.5x Earnings before Interest, Tax, Depreciation and Amortisation (Ebitda) the question turned to what plans the company has in mind for its surplus cash flows. There is $470 million still outstanding on its high yield bond (paying a coupon of 8.5% pa) and more than one analyst at the presentation asked about the resumption of a dividend. (Dividends have not been paid for two years). Venkat played his cards close to his chest. “We will examine what delivers the best returns for shareholders in due course,” he told Mineweb post the presentation. He also said that the dividend would only be resumed if they were confident they could pay one consistently.

http://today.moneyweb.co.za/article?id=571937#.YsxAo0vJ9S8
Question 4  30 marks [27 minutes]

The article deals at length with the impact of its capital structure on its financial situation. The article also refers to the firm having a target capital structure of debt being within 1.5 Earnings before Interest, Tax, Depreciation and Amortisation (Ebitda). Miller and Modigliani's two models of capital structure, however, argue that capital structure is either irrelevant or that firms should employ 100% debt finance.

Provide a detailed discussion of the two Miller and Modigliani models and use the AngloGold Ashanti case to illustrate the theoretical arguments opposing their conclusions. Comment on how Ashanti Gold's use of a target capital structure compares with the empirical evidence regarding firm's practice regarding capital structure.

AND/OR

Question 5  30 marks [27 minutes]

Critically discuss the difference between Shareholder and Stakeholder theories of the goal of financial management and discuss how Ashanti Gold's drive to cut costs might be viewed from these two viewpoints.

AND/OR

Question 6  30 marks [27 minutes]

The article poses the question of what Ashanti Gold should do with its surplus cash and notes that one of the options is for the firm to begin paying dividends again.

Critically discuss Ashanti Gold's alternatives from the perspective of Jensen's Free-cash-flow hypothesis and Myers and Maljuf's Pecking order Theory.

AND/OR

Question 7  30 marks [27 minutes]

With reference to academic theory and empirical evidence discuss the pros and cons of Ashanti Gold beginning to pay dividends again.

AND/OR

Question 8  30 marks [27 minutes]

With reference to the Ashanti Gold case discuss the risks that a typical firm is exposed to and, with reference to the empirical literature, critically discuss the arguments for and against firms using financial risk management techniques.
SECTION C - 60 Marks (54 minutes)

ANSWER ANY TWO (2) OF THE FOLLOWING SEVEN QUESTIONS

Question 9  30 marks [27 minutes]

It is just not that common where an initial public offering (IPO) comes along and totally blows its debut out of the water without investors catching on. So, what about a mystery IPO that doubles on its first trading day? Tantech Holdings (NASDAQ: TANH) entered the market Tuesday and took the IPO market by storm. Tantech produces and sells three categories of bamboo charcoal products: BBQ products, Charcoal Doctor products and EDLC carbon. All of the products are produced from bamboo charcoal and bamboo charcoal byproducts. Because of the lifespan and fast growth rate of bamboo, the products are considered environmentally friendly. Shares of Tantech more than doubled, up 118% at $8.70, on the first day of trading.

http://247wallst.com/investing/2015/03/24/mystery-ipo-doubles-on-debut/#ixzz46qX8TNWW

With reference to theoretical and empirical literature on the performance of IPOs critically discuss the possible reasons for the situation described in the extract.

AND/OR

Question 10  30 marks [27 minutes]

Briefly discuss how you can use tools such as Economic Value Added (EVA), Market Value Added (MVA), Cash Flow Return on Investment (CFROI) and Cash Value Added (CVA) to measure the performance of management of newly listed firms.

AND/OR

Question 11  30 marks [27 minutes]

A fire sale of Abengoa projects around the world is looking increasingly likely as the Spanish infrastructure developer faces bankruptcy. Abengoa was already planning to sell its Khi Solar One concentrating solar power (CSP) plant in South Africa back in September, according to a shareholder market update filed with Spanish financial regulator the Comisión Nacional del Mercado de Valores. The selloff was intended to deal with a €9 billion ($9.77 billion) debt, alongside a further cash injection from investors. But last month, refinancing talks fell apart, forcing Abengoa to file for preliminary creditor protection and a sale of its assets more likely as part of bankruptcy proceedings. One source close to the company said he did not think current projects such as Khi Solar One or Atacama 1, a 210-megawatt hybrid CSP and PV plant in Chile, would be halted. “They are projects that are based on pretty solid project finance,” he said. “They might go ahead under a different owner, though.”


With reference to the above extract, discuss the characteristics, the risks, the pros and cons of project finance.

Question 12  30 marks [27 minutes]
Barclays selling Absa to save costs

Cape Town - UK banking group Barclays Group on Tuesday made firm its intention to sell its 62.3% stake in Barclays Africa Group (BAGL, formerly Absa) [JSE:BGA]. The global banker listed as part of its rationale for the sell-down that despite a strong returns profile locally, Absa's contribution is significantly diluted at Barclays Group level. The bank also carries 100% responsibility with only 62.3% benefits, it said at its results presentation. Barclays said the sell-down will lead to further simplification of the group, resulting in cost reductions. The sell-down would mean an approximate £2bn cost reduction and take out 40 000 heads out of Barclays Group.

Barclays said it intends selling its African business over the coming two to three years "to a level which will permit us to deconsolidate it from an accounting and regulatory perspective". The intended sale is subject to shareholder and regulatory approvals. The announcement came as the UK bank announced net losses more than doubled last year.

Barclays Group said Absa is a well-diversified business and a high quality franchise. "However the stake in BAGL presents specific challenges to Barclays as owners, such as the level of capital held in respect of BAGL, the international reach of the UK Bank Levy, the GSIB buffer, and MREL/TLAC and other regulatory requirements."

Barclays CEO Jes Staley said in his year-end review on Tuesday Africa Banking performed well despite currency headwinds. "Through Barclays Africa, we have excellent franchises in Africa, with a great management team," said Staley.


Discuss the several reasons why firms might want to divest assets and the various ways in which this can be achieved.

AND/OR

Question 13  30 marks [27 minutes]

Credit is a difficult issue these days. In the US, firms generate more than 15% of their financing from accounts payable. Internationally, these levels can be even higher. And since more than 80% of transactions are vendor financed, parts makers and other companies are rightfully worried about getting paid. Whereas in most cases the supplier has already been reimbursed, these companies have to bear the costs until such time as the customer pays. This financial gap is known as net trade credit, which together with inventory, forms the major component of working capital. The latter is a significant driver of profitability. In an average company, decreasing working capital by 30% leads to a 16% increase in after-tax returns on invested capital. It is thus hardly surprising that the traditional view has been to reduce working capital. Indeed, many major initiatives along these lines have recently been launched. Deutsche Post, for example, has announced a program to reduce working capital by €700 million by the end of 2009. Meanwhile others, such as retailer Tesco, have long managed to effectively push trade credit below zero by getting paid by their customers before they have to pay their suppliers.

Discuss the theoretical and empirical reasons of the use of trade credit in corporate finance and the challenges of trade credit in economic downturns such as the global financial crisis.

AND/OR
Questions 14 and 15 apply to the following extract

Mergers and Acquisitions—The New IPO

In the past, repeated rounds of fundraising were the norm for emerging biotech companies to finance drug development. In today’s challenging economy, however, it’s no secret that few will be able to access the capital markets. Even fewer will be able to do it at terms that are anything less than onerous. Additionally, it should probably go without saying—but we’ll say it just to be clear—that only the most elite (not to be confused with the delusional) private companies would consider attempting an IPO in these markets.

So what are the options to fund developing companies when cash is running out and big pharma fails to knock on the door with attractive partnering offers or shareholders demand a liquidity event? Mergers and acquisitions (M&A) is certainly one answer that is heard with increasing frequency. At last activity in the sector is beginning to support the long-held thesis that the biotechnology industry is ripe for consolidation. While finding the right fit and negotiating favorable transaction terms are difficult tasks, the importance of selling the deal to the shareholders and the overall marketplace cannot be overlooked or underestimated.

One significant factor in the long-term progress of any M&A event is communicating the value and likelihood of success for the combined company. This involves careful preparation and execution of certain tactics to not only ensure a successful shareholder vote but to also best position the new firm for its future.


Question 14  30 marks [27 minutes]

Explain why it may be difficult for drug development companies to raise funds through IPOs and options available to them (excluding mergers and acquisitions) and the challenges that firms that eventually succeed to raise funds with IPOs may face.

AND/OR

Question 15  30 marks [27 minutes]

Provide empirical evidence on the short run and long run performance of mergers and acquisitions clearly explaining why mergers and acquisitions between drug developing companies may not achieve their desired outcomes.
<table>
<thead>
<tr>
<th>x</th>
<th>0.0000</th>
<th>0.0100</th>
<th>0.0200</th>
<th>0.0300</th>
<th>0.0400</th>
<th>0.0500</th>
<th>0.0600</th>
<th>0.0700</th>
<th>0.0800</th>
<th>0.0900</th>
<th>0.1000</th>
<th>0.1100</th>
<th>0.1200</th>
<th>0.1300</th>
<th>0.1400</th>
<th>0.1500</th>
<th>0.1600</th>
<th>0.1700</th>
<th>0.1800</th>
<th>0.1900</th>
<th>0.2000</th>
<th>0.2100</th>
<th>0.2200</th>
<th>0.2300</th>
<th>0.2400</th>
<th>0.2500</th>
<th>0.2600</th>
<th>0.2700</th>
<th>0.2800</th>
<th>0.2900</th>
<th>0.3000</th>
<th>0.3100</th>
<th>0.3200</th>
<th>0.3300</th>
<th>0.3400</th>
<th>0.3500</th>
<th>0.3600</th>
<th>0.3700</th>
<th>0.3800</th>
<th>0.3900</th>
<th>0.4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula Sheet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$C = S_0 e^{\gamma T} N(d_1) - X e^{\gamma T} N(d_2)$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$d_1 = \left{ \ln \left( \frac{S_0}{X} \right) + (r - \rho + \sigma^2/2)T \right} / \sigma \sqrt{T}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$d_2 = d_1 - \sigma \sqrt{T}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$P = C + X(1 + r_T)^{-T} - S$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$i_{real} = (1 + i_{nom}/m)^m - 1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$K_v = K_u + [(1-t)(D/E)(K_u - K_d)]$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convexity $= \frac{H + L - 2P_0}{2P_0 - \Delta y^2}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_L = \beta_u + (\beta_u - \beta_d)(1-t)(D/E)$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta P = -D^* \times \Delta y + \frac{1}{2} \text{Convexity} \times \Delta y^2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta = \beta_u + \beta_u[D/E(1-t)]$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price $= \text{Coupon} \times \frac{1}{r} \left[ 1 - \frac{1}{r^T} \right] + \frac{FV}{1. r^T}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$B_u = \beta(\text{proxy})/[1 + D/E(1-t)]$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$p = [(1 + r_t - y) - d] / (u - d)$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$u = \exp{ \sigma(\Delta t)^{0.5} }$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\sigma^{firm} = (E/V)^2 \sigma^2 E + (D/V)^2 \sigma^2 D + 2(\text{DE}/V^2)pED\sigma E\sigma D$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y_{t_{-1,t}}^1 = (1 + S_{t_{-1}})^{1-1} \times (1 + f_{t-1,t})$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>