Session 8B: Post class test solutions

1. **e. The cost of borrowing money today, on long term debt.** The cost of debt is always a current cost of borrowing, and no matter what choices the company makes on maturity, you should be using a long term cost of debt. (Otherwise, you open the door to companies playing games with term structure, borrowing short term to make it look like they have cheaper debt.)

2. **e. All of them**. Even (b) and (c) are not always true, even though they are mostly true. If the riskfree rate falls, but default risk shoots up, you could see the cost of debt rise as a consequence, as is the case in many crises. This often happens during intense crises (like February-March 2020), where a crisis precipitates a flight to safety (pushing down the riskfree rate) and a rise in default spreads.

3. **c. $2.39 billion.** The market value of debt is the present value of the interest payments (treated as an annuity for the next five years) and the principal payment (at the end of five years): PV = 100*(1-1.05^-5)/0.05+2500/1.05^5 = $2,392 million. (You can use the PMT function on your calculator to compute the present value of the annuity and get the same answer)

4. **c. Marginal tax rate.** Interest expenses save you taxes on your last dollars of income, not your first or middle dollars. Hence, you should always use the marginal tax rate.

5. **b. $216 million in equity, $184 million in debt.** Compute the value of 10 year-coupon bond with a face value of $300 million and a pre-tax cost of debt of 5% (Riskfree rate + Default spread) = $300/1.05^5$ = $184 million. Net this out from the market value of debt of $400 million, and the difference is the value of the equity conversion option.