

MATH2090 – Mathematics of Finance

Assignment 7

Name:

MUN Number:

Due Date: Monday, 6 November

1. A bond of \$10,000 redeemable at par after 10 years has a coupon of 2.9% per year convertible semi-annually. Find the price which will yield the investor
 - (a) 2% effective per half year.
 - (b) 4% effective per year.
2. A par-value bond with a \$10,000 face value and 2.6% coupon, convertible semi-annually, is priced at \$11,000. If the effective annual yield rate is to be no more than 1.8% what is the maximum whole year term (i.e. time to maturity) of the bond?
3. A corporation issues par-value bonds with an annual 2.9% coupon yielding 2.5% effective annually and with a ten year maturity. The corporation now proposes to issue new par-value bonds with the same price and face value but with a coupon rate of 3.2%, convertible semi-annually. What is the maximum whole year term that this the new bond must have in order that they give an annual yield which is no more than the original bonds?
4. Consider a par-value bond with a 2.4% coupon, convertible quarterly (i.e. every 3 months), face value of \$1,000 with a ten year maturity and an effective annual yield rate of 2.9%.
 - (a) What is the price of this bond?
 - (b) If the bond is bought at the beginning of January, 2014, find the book value of the bond on June 15, 2020.
 - (c) Give the bond amortization schedule for the year 2023, assuming it is bought at the beginning of 2014.