# Chapter 11 - Test Bank

### Multiple-choice questions

[Go to ⇨ Multiple choice questions - Memorandum](#AC11MCQ)

*Answer the following questions by selecting the appropriate answer from the list below.*

**Which of the following statements with regard to bonds are correct?**

1. If the bond price is higher than the principal, the bond is trading at a discount.
2. Bonds represent a higher risk to investors than equity instruments.
3. If the bond price is higher than the principal, the bond is trading at a premium.
4. Bonds represent a lower risk to investors than equity instruments.
5. (i) and (ii) only
6. (iii) and (iv) only
7. (i), (ii) and (iii) only
8. (i), (iii) and (iv) only

#### 

**What is the annual interest payment on a R1 million bond with a coupon rate of 8 per cent and a yield-to-maturity (YTM) of 10 per cent?**

1. R40 000
2. R50 000
3. R80 000
4. R100 000

**What is the settlement amount of a bond with a principal of R1 million and an annual coupon rate of 9 per cent that is trading at an all-in price of R98,00 per cent if the clean price is R97,50 per cent?**

1. R975 000
2. R980 000
3. R1 000 000
4. R1 090 000

**The bond price volatility will be greatest for which one of the following vanilla bonds, all trading at a 7 per cent yield to maturity?**

1. Coupon rate of 11 per cent and term to maturity of nine years
2. Coupon rate of 10 per cent and term to maturity of 10 years
3. Coupon rate of 9 per cent and term to maturity of eight years
4. Coupon rate of 8 per cent and term to maturity of 11 years

**Which ONE of the following statements with regard to duration is correct?**

1. Duration is the present value of the weighted average timing of a bond’s cash flows.
2. Duration of a coupon-paying bond is always more than its maturity.
3. Duration measures the pull-to-par effect of current market rates on a bond’s price.
4. The longer the duration of a bond, the lower the interest rate risk.

#### 

**Consider bonds A and B with similar maturities but where bond A is more convex than bond B. Which ONE of the following statements is correct?**

1. If bond yields decrease by 100 basis points, the price of A will increase more than that of B.
2. If bond yields rise, the duration of bond B will decrease at a faster rate than that of bond A.
3. If bond yields change by 100 basis points, applying the modified duration rule will give a better estimate of the new price for bond A than for bond B.
4. Investors will prefer bond B to bond A.

**What percentage of the auctioned amount for government bonds in the regular primary dealer auction is available on a non-competitive basis?**

1. 5%
2. 10%
3. 20%
4. 30%

**A bond with a call feature is most likely to be called when**

1. the bond’s yield to maturity increases above its coupon rate
2. the bond’s market price falls below its par value
3. market interest rates rise above the bond’s coupon rate
4. market interest rates fall below the bond’s coupon rate

**A bond that grants the bondholder the right to convert it to a specific predetermined number of shares of the issuing company is called a**

1. redeemable bond
2. convertible bond
3. exchangeable bond
4. bond with share warrant attached

**The Other Bond Index (OTHI) published by the JSE comprises of**

1. all non-sovereign bonds listed on the JSE-IRM
2. all non-sovereign bonds within the ALBI basket
3. the top 10 non-sovereign bonds listed on the JSE-IRM
4. the top 10 non-sovereign bonds within the ALBI basket

### Written questions

[Go to ⇨ Written questions - Memorandum](#AC11WQ)

*Answer the following questions.*

**Define the yield-to-maturity (YTM) of a bond.**

**Bond XYZ (8 per cent coupon) with a nominal value of R3 million matures on 30 September 2015 with coupon dates of 31 March and 30 September, and is traded (and settled) on 15 August 2011 at a yield of 6,75 per cent. The register closes 10 days before the interest dates.**

1. **Draw a simple line diagram in which you outline the following events for this bond in the year 2011:**

* **Last coupon date (LCD)**
* **Next coupon date (NCD)**
* **Book closing date (BCD)**
* **Last day to register (LCD)**
* **Settlement date (S)**

1. **If the clean price of this bond on the settlement date is R119,16958%, determine the all-in price consideration of this bond.**

**Bond A is currently priced at R106,25005% with a duration of 2,2 and a current yield rate of 10 per cent. What will be the approximate price of the bond be, using the modified duration rule, if the interest rate increases by 200 basis points?**

#### 

**Discuss the effect of an expected increase in interest rates on the demand for long-term bonds and the effect thereof on the yield curve.**

**Differentiate between Central Order Book and Report Only trading.**

**What is the purpose of issuing government retail bonds?**

**How is liquidity in government bonds in South Africa ensured?**

**List the reasons for the limited market for municipal bonds in South Africa.**

**What is the advantage of holding a zero-coupon bond?**

#### 

**Discuss the structure and flow of payments of catastrophe-linked (CAT) bonds.**

### True or false questions

[Go to ⇨ True/False questions - Memorandum](#AC11TFQ)

*Read the statements below and indicate whether they are true or false.*

**Price volatility of a bond is inversely related to the maturity of the bond.**

**All else being equal, more-convex bonds will always have a higher price than less-convex bonds as interest rates rise or fall.**

**The issuer of an RSA inflation-linked bond pays the holder the shortfall should the capital value be less than the principal on redemption of the bond.**

**The third market for bonds is when buyers and sellers trade unlisted bonds directly with each other and not through a broker.**

**A yield curve with a descending (negative) slope is an indication that short-term rates are expected to increase in future.**

### Choose the correct term

[Go to ⇨Choose the correct term - Memorandum](#AC11CTCT)

*Select the correct term to make the statement accurate.*

**The running yield of a bond trading at a discount is higher/lower than the coupon rate.**

**Bids for government bonds by primary dealers must be for a minimum of R1 million/R10 million.**

**When a bond is stripped, the principal strip will be sold at a discount/premium to the principal amount.**

**Callable bonds are bonds of which the principal is redeemable at the discretion of the issuer/holder.**

**A South African government bond issue dominated in euro in a Eurozone country will be classified as a foreign bond/Eurobond.**

# Chapter 11 - Memorandum

### Multiple-choice questions

[Go back to ⇦ Multiple choice questions](#C11MCQ)

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4. the top 10 non-sovereign bonds within the ALBI basket

### Written questions

[Go back to ⇦ Written questions](#C11WQ)

*Answer the following questions.*

**Define the yield-to-maturity (YTM) of a bond.**

**The YTM is the interest rate that makes the present value of all the cash flows of a bond equal to the bond’s market price if that bond is held to maturity. All cash flows over the entire lifespan of the bond are taken into account when calculating the YTM and consist of the following three elements:**

* **Coupon interest payments**
* **Interest on the interest (the compounding effect of reinvesting the periodic interest payments)**
* **Capital gain or loss at maturity**

**Bond XYZ (8 per cent coupon) with a nominal value of R3 million matures on 30 September 2015 with coupon dates of 31 March and 30 September, and is traded (and settled) on 15 August 2011 at a yield of 6,75 per cent. The register closes 10 days before the interest dates.**

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* **Settlement date (S)**

1. **If the clean price of this bond on the settlement date is R119,16958%, determine the all-in price consideration of this bond.**

LCD

S

LDR

BCD

NCD

30/9

30/9

15/8

20/9

19/99

31/3

**Accrued interest = coupon rate p.a. x d/365 = 0,08 x 137/137 = 0,0300274 or R3,00274%**

**All-in price = clean price + accrued interest = R119,16958% + R3,00274% = R122,17232%**

**Bond A is currently priced at R106,25005% with a duration of 2,2 and a current yield rate of 10 per cent. What will be the approximate price of the bond be, using the modified duration rule, if the interest rate increases by 200 basis points?**

**D\* = D/(1 + i) = 2,2/1,1 = 2. Therefore ∆P/P = D\*∆i = 2 × 200 bp = 400 bp or 4%.**

**Therefore the price will increase with approximately 4 per cent to R110,50005%.**

#### 

**Discuss the effect of an expected increase in interest rates on the demand for long-term bonds and the effect thereof on the yield curve.**

**When interest rates are expected to increase, people will not be eager to buy long-term bonds, because they think that they might soon be able to buy them at a higher rate (lower price). Those who want to sell long-term bonds now will therefore have to offer a premium to persuade investors to buy their long-term bonds, causing an upward-sloping yield curve.**

**Differentiate between Central Order Book and Report Only trading.**

**The Central Order Book is an on-screen trading method while the Report Only method is an off-screen method.**

**With the Central Order Book, orders from buyers and sellers are matched anonymously on an automated trading engine called Nutron. Once a transaction has been matched, the clearing house of the JSE acts as the counterparty for every transaction. Settlement takes place through the STRATE system on a T+3 basis.**

**With the Report Only model, the terms and the price of a trade are agreed between two counterparties and therefore not anonymously through the Nutron exchange trading system. The trade is, however, still booked and reported on the Nutron system, and settlement will take place through STRATE, as for a Central Order Book transaction.**

**What is the purpose of issuing government retail bonds?**

**The purpose of issuing government retail bonds is that the government wants to tap the savings of the general public on the one hand and provide an alternative risk-free investment vehicle to them on the other.**

**How is liquidity in government bonds in South Africa ensured?**

**Appointed primary dealers in South African government bonds are required to quote continuous two-way prices in seven key government bonds on request, and they are required to stand committed to deal in R10 million lots of all liquid government bonds.**

**List the reasons for the limited market for municipal bonds in South Africa.**

* **Local governments are not perceived to be sustainable entities due to a history of non-payment for services by their communities.**
* **There are no tax benefits attached to holding municipal bonds in South Africa, as in the US.**
* **The borrowing requirements of some of the smaller municipalities are too small to make listing viable.**

**What is the advantage of holding a zero-coupon bond?**

**The investor is certain of the return that will be realised if the bond is held until maturity as no reinvestment risk exists.**

#### 

**Discuss the structure and flow of payments of catastrophe-linked (CAT) bonds.**

**A special-purpose institution (SPI) is formed, which is a company whose sole purpose is to raise funds in the capital market and enter into an insurance or reinsurance contract with the sponsor.**

**The SPI sells the CAT bonds, and the funds raised are kept in a collateral account established for this purpose.**

**The sponsor does not have access to this fund unless the catastrophe occurs. The funds kept in the collateral account earn only the risk-free rate of return.**

**The difference between the risk-free rate and the higher return paid to investors is made up by payments from the sponsor to the SPI.**

**If the catastrophe does not occur during the lifespan of the bond, the funds in the collateral account will be used to repay the bondholders at maturity.**

**If the catastrophe does occur, funds from the collateral account will be disbursed to the issuer and the SPI will not be able to make the full interest payments and/or the full payment of the principal at maturity.**

### True or false questions

[Go back to ⇦ True/False questions](#C11TFQ)

*Read the statements below and indicate whether they are true or false.*

**Price volatility of a bond is inversely related to the maturity of the bond.**

**False – price volatility of a bond is positively related to the maturity of the bond.**

**All else being equal, more-convex bonds will always have a higher price than less-convex bonds as interest rates rise or fall.**

**True**

**The issuer of an RSA inflation-linked bond pays the holder the shortfall should the capital value be less than the principal on redemption of the bond.**

**True**

**The third market for bonds is when buyers and sellers trade unlisted bonds directly with each other and not through a broker.**

**False – the third market is the market for listed bonds traded off exchange.**

**A yield curve with a descending (negative) slope is an indication that short-term rates are expected to increase in future.**

**False – a yield curve with a descending (negative) slope is an indication that short-term rates are expected to *decrease* in future.**

### Choose the correct term

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*Select the correct term to make the statement accurate.*

**The running yield of a bond trading at a discount is higher/lower than the coupon rate.**

**higher**

**Bids for government bonds by primary dealers must be for a minimum of R1 million/R10 million.**

**R10 million**

**When a bond is stripped, the principal strip will be sold at a discount/premium to the principal amount.**

**discount**

#### 

**Callable bonds are bonds of which the principal is redeemable at the discretion of the issuer/holder.**

**issuer**

**A South African government bond issue dominated in euro in a Eurozone country will be classified as a foreign bond/Eurobond.**

**foreign bond**