

Tutorial Letter 102/2/2012

The SA Financial System

ECS2605

Second Semester

Department of Economics

This tutorial letter contains important information about your module.

Bar code

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1 GUIDELINES FOR ANSWERING EXERCISE 03/2012

Exercise 03 is a **self-evaluation assignment**, which means you have to use the guidelines that we provide here to evaluate your own answers. It is important that you first do the assignment by yourself **without** referring to your study material, and then mark it, using these guidelines and the prescribed study material. Unless otherwise stated, all page and section references are to the prescribed book *Understanding South African financial markets* (2012 edition).

1.1 Discussion of section A: multiple-choice questions of Assignment 03/2012

1.
 - a. **Correct.** The more active the secondary market is, the easier it is for the central bank to buy and sell securities.
 - b. **Incorrect.** What is given here is the definition of a futures contract. An option gives the holder the right, but he or she is not obliged to buy or sell the underlying asset at a predetermined price during a specified period (see section 13.4).
 - c. **Correct.** All futures contracts are regarded as financial instruments. A futures contract, of which the underlying asset is coffee, will be regarded as a commodities market future (see section 13.4).

The correct alternative is [4].

2.
 - a. **Incorrect.** Tax collection is one of the functions of the fiscal authorities, more specifically, the Treasury. The fiscal and monetary authorities act independently of each other.
 - b. **Correct.** The Corporation for Public Deposits, a wholly-owned subsidiary of the Reserve Bank, is responsible for investing the short-term funds of the public sector (see section 2.4).
 - c. **Correct.** Section 2.3.7 briefly refers to the type of statistics collected by the SARB and what they are used for. The SARB collects data on real and financial economic activities (often with the help of Statistics South Africa) and publishes the data in the *South African Reserve Bank Quarterly Bulletin*. See if you can find a copy of this publication in your local library or visit the Reserve Bank's website on <http://www.reservebank.co.za/>.

The correct alternative is [3].

3. This question required a little interpretation and insight on your part. The answers cannot be found simply by going to the study material.

- 3, a. **Correct.** Repurchase agreements by the SARB with the banks imply that the banks have to pay back money borrowed via the repurchase agreement in question when the repo expires. Such a repurchase agreement is, therefore, an asset of the SARB.
- b. **Incorrect.** Loans granted by the SARB to the banks imply that money has to be paid back to the SARB. Such loans are, therefore, assets of the SARB.
- c. **Correct.** The SARB also keeps deposits from the government, and because this is money that the SARB owes to the government, it is a liability to the SARB.

The correct alternative is [4].

4. Which of the following statements are correct?

- a. The liabilities of the SARB include the reserve deposits that banks are legally obliged to keep with the Reserve Bank.
- b. The SARB seeks to achieve the predetermined inflation targets through changes in the repo rate.
- c. The SARB uses accommodation policy to influence the *size* of the money market deficit.

[1] a b c

[2] a b

[3] b c

[4] a c

[5] None of the above.

- a. **Correct.** Although banks are enforced by law to keep these reserves with the SARB, the money still belongs to the banks and such reserves are, therefore, liabilities of the SARB.
- b. **Correct.** Section 2.5.2 of the study guide explains that the SARB seeks to achieve its inflation targets through changes in its interest rate policies and also explains that the interest rate used by the SARB is the repo rate. Inflation targets are also discussed in section 2.3.1 of the prescribed book and the repo rate is discussed with the description of the application of monetary policy (in section 2.3.1).
- c. **Incorrect.** Accommodation policy is used to influence interest rates. However, as explained in section 2.5.2 of the study guide and section 2.6 of the prescribed book, the SARB has to be able to influence the money market deficit to make accommodation policy effective. This is done mainly through open-market operations (see section 2.3.1). Tax and loan accounts (see section 2.3.4) may also be used. Public debt

management (see section 2.3.4) may also influence the size of the money market deficit. Changes in reserve asset requirements can also influence the money market deficit, but are not used as a systematic tool in South Africa (see section 2.3.5).

The correct alternative is [2].

5. a. **Incorrect.** Banks keep required reserves with the SARB. Due to the fact that these reserves do not earn interest banks keep the minimum level of reserves possible.
- b. **Incorrect.** See section 2.3.1. The SARB can only influence one interest rate, namely the repo rate, directly through monetary policy. A change in the repo rate may affect other rates, and usually does, but there is no mechanical link to these changes – they occur as a result of market forces.
- c. **Incorrect.** See the list of instruments mentioned in section 2.5.2 of the study guide that can be used as underlying instruments for repo transactions.

The correct alternative is [5].

6. a. **Incorrect.** The purpose of this statement is to eliminate uncertainty concerning this issue. The SARB's "lender-of-last-resort" function is about banks that are experiencing a liquidity deficit that **cannot** be financed by the SARB's regular repo transactions. If the stability of the whole banking system is threatened by this, the SARB may intervene and supply temporary liquidity. The SARB should, however, only do this if it is clear that the bank is solvent and has not contravened the Banks Act.
- b. **Correct.** When the SARB sells Reserve Bank debentures, money flows out of the financial system to the SARB, which means that the money market deficit increases. See figure 2.2 in the study guide.
- c. **Incorrect.** The money market deficit only increases when money flows out of the banking system. If the bank buys government stock and the government keeps the money received for the government stock with the bank, the banking system's deficit stays the same. If, however, the government puts that money into its account with the SARB, the money market deficit will increase.

The correct alternative is [5].

7. a. **Incorrect.** The primary objective of public debt management is to manage the government's outstanding debt (see section 2.3.4). However, such transactions may influence the money market deficit. See the answer to the next question for more information.
- b. **Incorrect.** As explained in question 6c, public debt management may influence the money market deficit. The monetary authorities must always, therefore, take cognisance of public debt management transactions.
- c. **Correct.** Because the amount of domestic currency that is available in the banking system decreases, the money market deficit increases (see figure 2.3(a) of the study guide).

The correct alternative is [4].

8. A changing repo rate is the most important **instrument** used by the SARB to influence the level of short-term interest rates in South Africa. See section 2.5.2 of the study guide, and figure 2.1 in the textbook and the discussion of that figure.

The correct alternative is [4].

9. a. **Incorrect.** You must now be aware that the actions of the fiscal authorities influence the money market deficit, and that the monetary authorities have to take all such actions into account. Section 2.3.4 explains that the SARB acts as banker, agent and adviser to the government. It should be clear actions regarding monetary and fiscal policy are not always independent of each other.
- b. **Incorrect.** See section 2.4.
- c. **Incorrect.** See section 2.3.1. Cash reserves are only changed in exceptional cases.

The correct alternative is [5].

10. a. **Incorrect.** Although the SARB can technically use changes in reserve asset requirements as a policy tool, it never does this (see section 2.3.1).
- b. **Incorrect.** See section 2.3.5 - the banking sector holds the "unofficial reserves".
- c. **Incorrect.** The objectives of the SARB do not include reaching or supporting a specific target for the exchange rate (see section 2.3.5).

The correct alternative is [5].

11. a. **Incorrect.** The depreciation of the currency during 2002 should be enough to convince anyone that this statement is incorrect. The SARB does not have adequate foreign exchange reserves to counteract a depreciation of the rand. Nor is it any longer part of the SARB's mission to protect the external value of the rand. It may react to a depreciation by increasing the repo rate, but will only do so once it is clear that the depreciation of the rand is influencing the inflation rate inside the country. This will push up local interest rates and may cause an increase in the inflow of foreign capital. Please note, however, that the SARB reacts to changes in the expected inflation rate and not to changes in the exchange rate.
- b. **Correct.** See section 3.2.1 of the prescribed book.
- c. **Incorrect.** When a retail store provides credit, this credit cannot be deposited somewhere. When this credit is redeemed, money will flow from one deposit (that of the debtor) to another deposit (that of the creditor). The amount of money in the economy is not, therefore, affected. When a bank grants someone a loan, however, that money will usually flow back into the banking system in the form of a deposit. If, for example, I borrow money from the bank to buy a car, the garage owner who sold me the car will deposit that money into his or her bank account, increasing the bank's deposits and thus creating money.

The correct alternative is [4].

12. a. **Correct.** Strictly speaking, it is probably more correct to say that a bank's profit is *influenced* by the interest paid on its liabilities and the interest received on its assets, because there are other factors that influence the banks' profit situation. See section 3.4.
- b. **Correct.** See section 3.3.1.
- c. **Correct.** In section 3.5, the author explains why banks should be regulated. To the reasons he gives here you can add the fact that banks should be regulated because there is a lender-of-last-resort facility. Banks may be willing to take chances because of this available "safety net", but regulation should ensure that they do not, in fact, do this. It is important that you understand that the lender-of-last-resort facility is not available to banks that take unnecessary risks.

The correct alternative is [1].

13. a. **Incorrect.** See section 3.6.
b. **Correct.** See section 3.5.1.
c. **Correct.** See introduction to section 3.5.

The correct alternative is [3].

14. a. **Incorrect.** In terms of FICA, banks have to verify the source of their clients' deposits (see section 3.5.1).
b. **Incorrect.** See section 3.5.1.
c. **Incorrect.** Cash reserve requirements form part of the South African Reserve Bank Act (see section 3.5.1).

The correct alternative is [5].

15. a. **Incorrect.** The objective of FICA is to combat money laundering, while the objective of FAIS is to protect clients against improper conduct by financial services providers. See section 3.5.1.
b. **Correct.** Refer to section 3.4. Banks' liabilities (deposits) may be withdrawn at short notice, but their assets (loans) are generally long term.
c. **Correct.** This can be derived from the answer to question 15b. Banks' assets (loans) are high risk, because there is a fairly good chance that they may not be paid back. Their liabilities (deposits) are low risk, because it is unlikely that their depositors' money will not be available when they want to withdraw.

The correct alternative is [3].

16. a. **Correct.** See section 6.1.
b. **Incorrect.** Long-term insurance provides for pure risk, but not for speculative risk. Speculative risk implies that a loss may be suffered. In the case of long-term insurance, funds should be invested so that a loss will not be suffered. Profits can, however, be made (ie there is an investment component to long-term insurance). See section 6.1.
c. **Incorrect.** Short-term insurance deals with eventualities and long-term insurance with certainties (eg death and retirement – see sections 6.2 and 6.3).

The correct alternative is [3].

17. a. **Incorrect.** The liabilities of short-term insurers should be liquid to ensure that they always have adequate funds available to pay out any claims. Short-term insurers do not know when they will have to pay out claims (see section 6.2).
b. **Incorrect.** See section 6.3.

- c. **Incorrect.** See section 6.3.

The correct alternative is [5].

18. a. **Incorrect.** See section 6.4.2.
 b. **Correct.** See table 6.2.
 c. **Incorrect.** The ombudsman is appointed by the insurance companies that subscribe to this industry arrangement (see section 6.3.3).

The correct alternative is [3].

- 19 a. **Correct.** See section 7.1.
 b. **Incorrect.** Retirement funds also pay out on the death of a member (see section 7.2).
 c. **Incorrect.** See section 7.2.

The correct alternative is [2].

20. a. **Incorrect.** In the case of non-contributory funds, only *employers* contribute to the fund (see section 7.2).
 b. **Incorrect.** In the case of a defined benefit fund, the investment risk lies with the *employer* (see section 7.2).
 c. **Correct.** See section 7.2.

The correct alternative is [4].

21. a. **Correct.** See section 7.3.1, which discusses the advantages of a defined benefit fund for employers.
 b. **Correct.** See the first sentence in section 7.3.2.
 c. **Incorrect.** This is one of the advantages of a defined *contribution* fund. In the case of a defined benefit fund, the employer benefits from good investment returns (see section 7.3.1).

The correct alternative is [2].

22. a. **Incorrect.** In the case of a defined contribution fund, the benefit is determined by the member's contributions plus the employer's total contributions and the investment returns (less costs). See table 7.2 for a clear summary of defined benefit and defined contribution funds.
 b. **Incorrect.** Retirement funds may invest a maximum of 15 per cent of total liabilities in foreign assets (see "Regulation 28" in section 7.4.1).

- c. **Incorrect.** As mentioned in the discussion of "Regulation 28" in section 7.4.1, the treatment of derivatives is omitted from Regulation 28.

The correct alternative is [5].

23. a. **Incorrect.** See section 7.4.2.
b. **Correct.** See section 7.5.2.
c. **Correct.** See the end of section 7.2 and discussion of "Regulation 28" under section 7.4.1.

The correct alternative is [3].

24. a. **Correct.** This and the next question test your insight. The primary risk that banks face is the risk that the loans they grant will not be paid back. We call this "credit risk" or "default risk".
b. **Correct.** In financial terms, when someone "underwrites" something, this means that the underwriter takes upon itself all, of or part of, the risk that something may happen for an agreed upon fee. In terms of insurance, this means that the insurer runs the risk that the premiums it has received will not adequately cover all eventualities.
c. **Incorrect.** The prices that are quoted daily are the prices at which you can buy and sell today. Your profit, if you sell your unit trusts today, will depend on the difference between the price you paid on the day you bought them and today's selling price (see section 8.4.1 for a discussion of CISs).

The correct alternative is [2].

25. a. **Incorrect.** The CIS manager is responsible for making investment decisions (see section 8.4.1).
b. **Incorrect.** See table 8.4.
c. **Correct.** If the total market capitalisation of the company exceeds R2 billion, up to 10% of the assets of a unit trust may be invested in one particular security. If not, the maximum that a CIS may invest in one company's shares is 5% of the total assets of that CIS (see section 8.4.1 under "*Investor protection*" and table 8.4).

The correct alternative is [4].

26. a. **Incorrect.** See table 8.5.
b. **Incorrect.** See table 8.5.
c. **Incorrect.** Property unit trusts, as the name indicates, invest in property (see section 8.4.1).

The correct alternative is [5].

27. a. **Correct.** See section 8.4.1 under the heading “*Classification of CISs*”.
- b. **Incorrect.** As discussed in section 8.4.5, the PIC manages various pension and provident funds, social security funds and the Guardians’ Fund (ie mainly long-term liabilities), and will therefore invest mainly in capital market instruments with longer maturities.
- c. **Correct.** See section 8.4.6.

The correct alternative is [4].

28. a. **Correct.** See section 10.6.4.
- b. **Correct.** See section 10.2.1.
- c. **Incorrect.** See section 10.2.3.

The correct alternative is [2].

29. a. **Incorrect.** Reserve Bank debentures (RBDs) are issued by the SARB, which is a financial intermediary. Reserve Bank debentures are, therefore, indirect securities (see section 10.6.2).
- b. **Correct.** See section 10.6.3.
- c. **Incorrect.** The return on Treasury bills is determined by the price at which they are issued. Treasury bills are discount instruments (see section 10.6.1).

The correct alternative is [4].

30. a. **Correct.** This question tests your insight and is also revision for the examination. The different ways in which a financial unit experiencing a deficit can finance that deficit is one side of the financial market. The other side has to do with the investment options available to surplus units.
- b. **Correct.** Banks are the only private institutions that can create money, but funds are also provided by units experiencing financial surpluses.
- c. **Incorrect.** The interest rate on negotiable certificates of deposit is determined on the date of issue (see section 10.6.4).

The correct alternative is [2].

31. a. **Correct.** This statement is about the difference between financial and real investment. Real investment refers to the buying of real production factors, whereas financial investment refers to the buying of financial assets.
- b. **Correct.** See the discussion of statement 31a.

- c. **Incorrect.** Investors in financial markets sometimes suffer enormous losses. When the price of securities goes down, the investors that bought them at a high price suffers losses. Why do they sell them if they know they are going to suffer a loss? The answer to this question is: either because they need liquidity or because they do not expect the prices of the securities they own to increase again, and they therefore decide to sell now in order to cut their losses.

The correct alternative is [1].

32. a. **Incorrect.** Because the security was issued at a discount price, we know that its nominal value must be higher than the R110 000 Firm A paid for it. We therefore know that statement (a) is incorrect without even doing a calculation.
- b. **Correct.** If the security was issued on 31 December 2008 and expires on 31 December 2010, the tenure is one year (or 365 days).
- c. **Correct.** When a previously issued security is sold again, we say that it is trading in the secondary market.

The correct alternative is [2].

33. a. **Incorrect.** Because a negotiable certificate of deposit is an interest add-on instrument (see sections 10.5.2 and 10.6.4), its maturity value is equal to the nominal value plus interest. An investor will only buy a negotiable certificate of deposit at a price lower than the maturity value (because it is bought to earn income); we know, therefore, that the buying price has to be lower than the maturity value.
- b. **Correct.** Because a bankers' acceptance is a discount instrument (see sections 10.5.1 and 10.6.3), its maturity value is equal to the nominal value. The buying price of a banker's acceptance is equal to the nominal value minus the discount. The buying price is therefore *less* than the nominal value.
- c. **Incorrect.** A Treasury bill is a discount instrument. The nominal yield on a discount instrument will be slightly *higher* than the discount rate (see section 10.5.1). Make sure you understand why this is correct.

The correct alternative is [4].

34. a. **Correct.** When interest rates fall, the prices of securities increase. If a banker's acceptance is sold at a *lower* interest rate than the rate at which it was bought, this means that it is sold at a *higher* price than the price at which it was bought. This implies a capital profit.
- b. **Correct.** It is usually sold to the accepting bank.

- c. **Incorrect.** See section 10.6.3.

The correct alternative is [2].

35. a. **Incorrect.** The fact that bankers' acceptances are traded actively in the secondary market implies that this is wrong.
 b. **Incorrect.** Bankers' acceptances are created at the initiative of banks' clients who are in need of short-term finance.
 c. **Correct.** See section 10.6.4.

The correct alternative is [4].

36. a. **Correct.** See section 10.6.4.
 b. **Incorrect.** The list of securities that may be used as collateral for repurchase transactions between the banks and the SARB appears in section 2.5.2(a) in the study guide.
 c. **Incorrect.** See also section 2.5.2(a) in the study guide.

The correct alternative is [5].

37. a. **Correct.** See section 2.5.2(a) in the study guide.
 b. **Correct.** See section 10.6.1 in the textbook.
 c. **Incorrect.** A Treasury bill is payable on a certain predetermined date in the future. See section 10.6.1.

The correct alternative is [2].

38. a. **Incorrect.** See the discussion of the secondary market in section 10.6.1.
 b. **Correct.** See section 10.6.5.
 c. **Incorrect.** The instruments that are used as underlying instruments when the SARB enters into repurchase agreements with the banks for accommodation purposes are Treasury bills, Reserve Bank debentures, government bonds and Land Bank Bills. All of these are issued by government or semigovernment institutions. Negotiable certificates of deposit are issued by private sector banks and accommodation is not provided against such instruments.

The correct alternative is [4].

39. The amount received by the seller can be calculated as follows:

$$\begin{aligned}\text{Consideration} &= N - (N \times i \times n) \\ &= R1 \text{ m} - (R1 \text{ m} \times 0,05 \times 146/365) \\ &= R1 \text{ m} - R0,02 \text{ m} \\ &= R0,98 \text{ m or R980 000}\end{aligned}$$

The nominal annual return can be calculated as follows:

$$\begin{aligned}\text{Actual annual return} &= (\text{discount amount/consideration}) \times (1/n) \\ &= (R20\ 000/R980\ 000) \times (365/146) \\ &= 0,05102041 \text{ or } 5,102041\%\end{aligned}$$

- a. **Incorrect.** See the foregoing calculations.
- b. **Correct.** See the foregoing calculations.
- c. **Incorrect.** See the foregoing calculations.

The correct alternative is [4].

40. a. **Incorrect.** Negotiable certificates of deposit are interest add-on instruments, which means that the interest is paid on them when they expire. On that day, however, the *holder* and not the *seller* will receive the interest.
- b. **Incorrect.** The maturity value can be calculated as follows:
- $$\begin{aligned}\text{MV} &= N \times [1 + (i \times n)] \\ &= R980\ 392,15 \times [1 + (0,1 \times 73/365)] \\ &= R980\ 392,15 \times 1,02 \\ &= R999\ 999,99\end{aligned}$$
- If we round it off to the nearest rand, the answer is R1 m.
- c. **Correct.** See the foregoing calculations.

The correct alternative is [4].

41. a. **Correct.** The consideration can be calculated as follows:

$$\begin{aligned}\text{Consideration} &= \text{MV} / [1 + (i \times n)] \\ &= R1 \text{ m} / [1 + (0,095 \times 53/365)] \\ &= R1 \text{ m} / 1,0137945 \\ &= R986\ 393,18\end{aligned}$$

If we round it off to the nearest rand, the answer is R986 393.

- b. **Incorrect.** See the foregoing calculations.
- c. **Correct.** The total income can be calculated as follows:

$$\begin{aligned}\text{Total income} &= \text{amount received} - \text{amount paid} \\ &= R986\ 393,18 - R980\ 392,15 \\ &= R6\ 001,03\end{aligned}$$

If we round it off to the nearest rand, the answer is R6 001.

The correct alternative is [2].

42. a. **Correct.** The accrued interest can be calculated as follows:

$$\begin{aligned}\text{Accrued interest} &= \text{amount paid} \times i \times n \\ &= R980\,392,15 \times 0,1 \times 20/365 \\ &= R5\,372,01\end{aligned}$$

If we round it off to the nearest rand, the answer is R5 372.

- b. **Incorrect.** See the foregoing calculations.
c. **Incorrect.** The fact that the negotiable certificate of deposit was sold at a lower interest rate than the rate at which it was bought already indicates a capital *profit*. The amount of the capital profit can be calculated as follows:

$$\begin{aligned}\text{Capital profit (loss)} &= \text{total income} - \text{accrued interest} \\ &= R6\,001,03 - R5\,372,01 \\ &= R629,02\end{aligned}$$

The correct alternative is [3].

43. a. **Incorrect.** The yield rate can be calculated as follows:

$$\begin{aligned}\text{Yield} &= \text{total income}/\text{amount paid} \times 1/n \\ &= R6\,001,03/R980\,392,15 \times 365/20 \\ &= 0,11170917 \text{ or } 11,170917\%\end{aligned}$$

If we round it off to two digits after the comma, the yield is 11,17%.

- b. **Correct.** See the calculations above.
c. **Incorrect.** See the foregoing calculations.

The correct alternative is [2].

44. a. **Correct.** See the first sentence in chapter 11.
b. **Incorrect.** Shares are also capital market instruments and no fixed interest is payable on shares, only dividends. Not even all bonds are fixed interest bearing (as indicated in section 11.1).
c. **Incorrect.** The coupon or interest payable on a fixed interest-bearing bond is a fixed percentage of the *principal*, which is not the same as the buying price (see section 11.2).

The correct alternative is [5].

45. a. **Correct.** If the price of a bond is higher than R100%, we say that it trades at a premium. If the price is R100%, we say that it trades at par, and if it is lower than R100%, we say that it trades at a discount (see section 11.2.1).
- b. **Incorrect.** Returns on government bonds consist of three elements: coupon interest, interest on the interest and capital profit or loss (which represents the difference between the buying and selling price) (see section 11.2.1).
- c. **Correct.** This is illustrated in box 11.2. If a bond is bought at par, the running yield is equal to the coupon rate. If a bond is bought at a *discount*, the running yield is *higher* than the coupon rate. If it is bought at a *premium*, the running yield is *lower* than the coupon rate.

The correct alternative is [4].

46. a. **Correct.** See section 11.2.1.
- b. **Correct.** All the factors that influence bond yields and bond prices are listed in section 11.3.
- c. **Correct.** Same as for statement (b).

The correct alternative is [1].

47. a. **Incorrect.** The bond will trade cum interest. The buyer (REO Bank) will receive the coupon on 1 September 2010, which means that interest accruing to the seller, AB Holdings, for the period 1 March to 14 April has to be **added** to the clean price to get the all-in price.
- b. **Correct.** On that date, the bond will trade ex interest. The seller (AB Holdings) will receive the coupon on 1 March. Interest accruing to the buyer, CJ Limited, for the period 15 February to 28 February, therefore has to be **subtracted** from the clean price to get the all-in price.
- c. **Incorrect.** On that date, the bond will trade cum interest, in which case the accrued interest is **added** to the clean price to get the all-in price.

The correct alternative is [5].

48. a. **Incorrect.** See section 11.8.1.
- b. **Incorrect.** See section 11.8.1.
- c. **Incorrect.** The fact that the bondholder is in the UK does not make the bond foreign.

The correct alternative is [5].

49. a. **Correct.** Real investors are those who invest in real assets. They can use the capital raised by selling shares on the stock exchange to finance their real investment.
- b. **Incorrect.** Shares are not interest-bearing instruments. Dividends are paid on shares. See section 12.4.
- c. **Correct.** See section 12.4.

The correct alternative is [4].

50. a. **Correct.** See section 11.5.1.
- b. **Correct.** See section 11.8.1.
- c. **Correct.** See section 12.3.1.

The correct alternative is [1].

51. This question tests your insight to see if you understand the role of the JSE in the economy.
- a. **Correct.** When new shares are issued on the JSE, this involves the channelling of funds from surplus units (the investor) to deficit units (the issuer).
- b. **Incorrect.** The JSE does not supply credit. This is the function of the banking sector.
- c. **Correct.** Investors invest in shares that are listed on a formal exchange, because it ensures higher liquidity.

The correct alternative is [4].

52. a. **Correct.** We now require more rands to buy one US dollar.
- b. **Incorrect.** The rand has actually depreciated.
- c. **Correct.** We now require fewer rands to buy one US dollar.

The correct alternative is [4].

1.2 Discussion of section B: essay questions of Exercise 03/2012

We have provided a framework for answering each question and also tell you where to find the answer in the study material. First do the questions yourself and then evaluate your answers using the framework that we provide. This will tell you whether you are ready for the essay questions in the exam.

1. The functions of the financial system are discussed in section 1.4.1 and these include:

- Channeling of savings into investments. Financial intermediaries facilitate the flow of funds from surplus to deficit economic units.
- Pooling of savings. Financial intermediaries pool funds from small savers, eg collective investment schemes.
- Reduction of risk. Facilitating the management, diversification, and trading of risk – real producers can also hedge their risk using derivatives and insurance.
- Transferring of funds through time and across borders.
- An efficient payment system. Providing mechanisms for the clearing and settlement of payments – this enables the real sector to make and receive payments.
- Price discovery/ information. Providing ways to overcome incentive and asymmetrical problems that arise in financial contracting – also ensures that funds are allocated to efficient producers.
- Money creation.
- Enhanced liquidity and economies of scale.
- Efficient allocation of funds.

(5)

See section 1.4.1.

2. The first leg of a foreign exchange swap:

- Money (rand) flows from the banking system to the SARB. ✓
- Foreign exchange flows from the SARB to banks. ✓
- The money market deficit **increases**. ✓
- Banks can invest foreign exchange in foreign markets (where it earns interest). ✓

The second leg of a foreign exchange swap:

- Money flows from the SARB to the banking system. ✓
- Foreign exchange flows from banks to the SARB. ✓
- The money market deficit decreases. ✓

(7)

See section 2.5.2(a) of the study guide, specifically figure 2.3(a) and (b) and the discussion of these figures.

3. The best way to answer this question is to use a table to compare the differences:

Short-term insurance	Long-term insurance
Compensation is linked to the value of the loss. ✓	Compensation is a specified amount or an amount calculated according to a predetermined formula. ✓
Deals with eventualities. ✓	Deals with some events that are highly likely, and others that are less certain. ✓
Mainly concerned with risk assessment. ✓	Concerned with risk assessment and investment value. ✓
It has no maturity value. ✓	It may have a maturity value. ✓
Involves a contract of one year or less. ✓	Involves a longer-term contract. ✓
Assets consist of more liquid assets in order to correspond to the profile of liabilities. ✓	It can also invest in less liquid, more long-term assets. ✓

Any 4 x 2 (8)

See section 6.1.

4. The first leg:

- The SARB pays ✓
- the market value of the securities ✓
- to the bank. ✓

The second leg:

- The bank pays ✓
- the amount paid in the first leg + interest (✓) at the repo rate (✓)
- to the SARB. ✓

(7)

See section 2.5.2(a) of the study guide.

5. 15 June falls in the period between the register closing date and the coupon payment date. ✓

On 30 May (register closing date), because the bond belongs to the seller, the seller will receive the full coupon payment on 30 June. ✓ However, because the bond belongs to the buyer for 15 days of the coupon period, the buyer should be compensated for his or her portion of the coupon for these 15 days. ✓

Thus all-in price = clean price – accrued interest for 15 days. ✓

(4)

See section 11.2.2.

6. (i) Shares that rank higher than ordinary shares and therefore have a higher priority when it comes to the distribution of dividends (that is, dividends on preference shares) are paid before dividends on common shares are paid. ✓

Dividends on preference shares are a predetermined (fixed or index-linked) annual percentage of the nominal or par value of the share, while dividends on ordinary shares are determined subjectively by management. ✓ (2)

- (ii) For cumulative preference shares, if the company does not have the funds available to pay dividends, the dividends accrue until fully paid. ✓

For noncumulative preference shares, the dividends do not accrue, but are lost if the company cannot afford to pay dividends. ✓ (2)

See section 12.3.1.

7. The best way to answer this question would be to use a table to compare the differences:

Shares	Bonds
No predetermined interest on ordinary shares; dividends are paid if declared. ✓	Regular coupon payments. ✓
Represent owners' equity in the company. ✓	Represent liability to issuer. ✓
No maturity date. ✓	Bonds have a predetermined maturity date when they expire and capital is paid back to holder. ✓

(6)

See section 12.3.1 and Table 12.2.

8. (i) Timing – derivatives are generally concerned with cash flows in the future rather than the present. ✓

For example: A future foreign exchange transaction would involve a transaction to buy a certain quantity of a specified currency at a predetermined rate on a certain date in the future. ✓

- (ii) Rights and obligations – derivatives may provide different rights and obligations than the cash markets for the underlying instruments. ✓

For example: An option provides the holder with the right but no obligation to conclude a transaction, while a cash market transaction is never optional once a contract has been concluded. ✓

- (iii) Leverage – generally a derivative provides higher leverage, that is, more profit may be made for the same amount. ✓

For example: If one buys bonds in the cash market, the full market price of the bonds has to be paid, while an option provides the opportunity to pay only a percentage of the market price, but provides the opportunity to make the same amount of profit. ✓ (6)

See section 13.2.

9. An interest rate swap would be used by someone wishing to reduce the uncertainty of funding costs (✓) by fixing the interest rate on his or her borrowing for a certain period, especially when an increase in interest rates is expected. (✓)

An interest rate swap is an agreement between two parties to settle the net difference between two interest rate payments on a notional amount of money, with the one party agreeing to pay a fixed rate of interest and the other agreeing to pay a floating rate. (✓) (3)

See section 13.4.3.

2 GUIDELINES FOR ANSWERING EXERCISE 04/2012

Exercise 04/2012 is a **self-evaluation assignment**, which means you have to use the guidelines that we provide here to evaluate your own answers. It is important that you first do the assignment by yourself without referring to your study material, and then mark it, using these guidelines and the prescribed study material. Unless otherwise stated, all page and section references are to the prescribed book *Understanding South African financial markets* (2012 edition).

1. Alternatives [1] to [4] are characteristics of forwards, but not of futures. Alternative [5] is a characteristic of a future contract, but not of a forward. Refer to the introduction to section 13.4 and section 13.4.1.

The correct alternative is [5].

2. Alternatives [1] and [2] apply to forward contracts, but not futures (see section 13.4.1). Alternative [3] refers to futures, but not forwards (see introduction to section 13.4.1). Alternative [4] applies to both futures and forwards although, in the case of futures, the quantity of the underlying asset will be a standard quantity, while the contract will specify the quantity in the case of a forward. Alternative [5] applies to options (see section 13.4.2), but not to futures and forwards, because futures and forwards have to be exercised.

The correct alternative is [4].

3. This question was based on the third edition of the textbook and therefore should be disregarded.
4. Unit trusts and exchange-traded funds such as Satrix 40 are not derivative instruments. Neither alternatives [1] or [2] is therefore correct. An option to buy any asset is a derivative; therefore alternative [3] is a derivative. Alternative [4] describes a special bargain transaction and not a derivative, while alternative [5] describes an arbitrage transaction, both of which are special types of *transactions* that can take place on an exchange, but not derivative *instruments*.

The correct alternative is [3].

5. A call option is in-the-money if strike price of the option is below the current market price. A put option is in-the-money if the strike price is higher than the current market price. Options are at-the-money when the strike price is equal to the current market price (see section 13.4.2).

The correct alternative is [1].

6. The textbook does not discuss non-financial futures therefore this question should be disregarded.
7. The textbook does not define a forward rate agreement therefore this question must be disregarded.
8. The textbook does not define a forward rate agreement therefore this question must be disregarded.
9. An American-style option may be exercised any day up to the expiry date. The option described in this question expires on 31 May 2010, and may thus be exercised any day after conclusion and up to or on 31 May. Options (a) and (b) are, therefore, correct. Option (c) is incorrect, because 1 June is after the expiry date.

The correct alternative is [4].

10. Mine ABC enters into this derivative transaction to protect its position, namely, to limit its possible loss if the exchange rate turns against Mine ABC. This derivative is therefore used to *hedge* Mine ABC.

The correct alternative is [1].

11. Alternative [2] is correct.

We know the instrument is a discount instrument because a discount rate is given. Although bonds can also be issued at a discount, we know it is not a bond instrument because of its short life span. Negotiable certificates of deposit and Reserve Bank debentures are interest add-on instruments and not discount instruments. If it were a repurchase agreement, information regarding the market price of the underlying asset would need to be available. For a repurchase agreement, interest is also added to the market value of the underlying instrument and not discounted. A Treasury bill is a discount instrument; this tells us that this instrument may be a Treasury bill.

12. Alternative [4] is correct. A discount instrument is bought at a discount. The calculation of the consideration is given by formula F.10.2 in the prescribed textbook:

$$\begin{aligned}
 \text{Consideration} &= NV \times (1 - i \times n) \\
 &= R1 \text{ m} \times (1 - 0,1 \times 92/365) \\
 &= R1 \text{ m} \times 0,9747945 \\
 &= R974 \text{ 794,52}
 \end{aligned}$$

13. Alternative [1] is correct.

The yield is calculated using formula F.10.4:

$$y = \frac{\text{discount amount}}{\text{consideration}} \times \frac{1}{n} = \frac{R25\,205,48}{R974\,794,52} \times \frac{365}{92}$$
$$= 0,1026 \text{ or } 10,26\%$$

14. Alternative [3] is correct.

For a discount instrument, the nominal value is the maturity value.

15. Alternative [4] is correct.

SARB debentures are interest add-on instruments. Such instruments are issued at their nominal value. Consideration in the primary market is therefore equal to nominal value.

16. Alternative [5] is correct.

We first use formula F.10.10 to find the maturity value of the debentures:

$$MV = NV \times [1 + (i \times n)] = R2m \times \left[1 + \left(0,12 \times \frac{181}{365} \right) \right]$$
$$= R2m \times 1,0595068 = R2\,119\,014$$

The consideration in the secondary market is then obtained using formula F.10.11:

$$\begin{aligned} \text{Consideration} &= MV / [1 + (i \times n)] \\ &= R2\,119\,014 / [1 + (0,1 \times 81/365)] \\ &= R2\,119\,014 / 1,0221918 = R2\,073\,010 \end{aligned}$$

17. Alternative [1] is correct.

We use formula F10.12 to find the accrued interest:

$$= \text{Amount paid} \times i \times n = R2m \times 0,12 \times \frac{100}{365}$$

$$= R65\ 753$$

To calculate the total income, subtract the buying price from the selling price:

$$R2\ 073\ 010 - R2\ 000\ 000 = R73\ 010$$

Then use the following formula to find the capital profit or loss:

$$\text{Capital profit} = \text{total income} - \text{accrued interest}$$

$$= R73\ 010 - R5\ 753 = R7\ 257$$

18. Alternative [1] is correct.

The yield is calculated using formula F.10.13:

$$\text{yield} = \frac{\text{total income}}{\text{amount paid}} \times \frac{1}{n}$$

$$= \frac{R73\ 010}{R2\ 000\ 000} \times \frac{365}{100}$$

$$= 0,133 = 13,3\%$$

19. Alternative [4] is correct.

Consideration in leg one is calculated using formula F.10.16:

$$\text{Consideration} = \text{nominal value of bonds} \times \text{AIP of bonds}$$

$$= R5\ \text{m} \times R95,500\%$$

$$= R5\ \text{m} \times 95,500/100$$

$$= R4\ 775\ 000$$

20. Alternative [2] is correct.

Consideration in leg two of a repurchase agreement is calculated using the following formula:

$$\begin{aligned} \text{Consideration} &= \text{start consideration} \times (1 + \text{repo rate} \times n) \\ &= R4\,775\,000 \times \left(1 + 0,08 \times \frac{7}{365}\right) \\ &= R4\,782\,326 \end{aligned}$$

21. Alternative [1] is correct.

Bank X borrowed from ABC Investment Managers through the repurchase agreement. Bank X will, therefore, pay interest. The interest amount is calculated as follows:

Consideration in leg two – consideration in leg one:

$$= R4\,782\,326 - R4\,775\,000 = R7\,326$$

22. Alternative [1] is correct.

Statement (a) is correct. The running yield is calculated using formula F.11.2:

$$\text{Running yield} = \frac{\text{Annual income}}{\text{Buying price}} = \frac{R1\,000\,000}{R1\,025\,000} = 0,976 = 9,76\%$$

The bond is trading at a price which is above R100%; it is, therefore, trading at a premium. Statement (c) is correct.

23. Alternative [5] is correct.

Accrued interest is calculated using formula F.11.4:

$$\begin{aligned} \text{Accrued interest} &= \text{yield rate per annum} \times d/365 \\ &= 0,1 \times 92/365 = 0,0252055 \end{aligned}$$

To calculate the accrued interest amount, multiply this answer by the principal amount: $0,0252055 \times R10\text{ m} = R252\,055$

24. Alternative [3] is correct.

The clean price is the market price times the nominal value of the bond
= $95,00\% \times R10 \text{ m} = R9\,500\,000$.

On 30 September, the bond will trade cum interest. Thus:

$$\begin{aligned}\text{All-in price} &= \text{clean price} + \text{accrued interest} \\ &= R9\,500\,000 + R252\,055 = R9\,752\,055\end{aligned}$$

25. Alternative [3] is correct.

The bond register closes on 30 November. On 15 December, the bond will trade ex interest. The clean price is the same as in question 14 (since the market price is the same).

To calculate the accrued interest:

$$\text{coupon rate per annum} \times \frac{d}{365} = 0,1 \times \frac{16}{365} = 0,00438$$

To calculate the accrued interest amount: $0,00438 \times R10 \text{ m} = R43\,836$.

On 15 December, the bond trades ex interest.

The all-in price will be equal to the clean price minus the accrued interest:

$$R9\,500\,000 - R43\,836 = R9\,456\,164.$$

3 THE OCTOBER 2012 EXAMINATION

The format of the exam paper is set out on page 66 of Tutorial Letter 101/2012 (section 8.2).

The formula page that appears on page 67 of Tutorial Letter 101/2012 will be attached to the examination paper for your benefit. You are allowed to use a non-programmable pocket calculator in the examination for ECS2605.

The examination paper will consist of three sections:

Section A: Section A contains only compulsory questions that all students have to answer. It consists of discussion-type questions that cover the whole syllabus. Question A counts 20 marks. Examples of possible questions for Section A can be found in the section “Examples of questions for Section A of the exam” on page 11.

Section B: Section B consists of three discussion-type questions of 15 marks each. You have to answer two of the three questions. These questions are based on the following study units:

Question B1: Study unit 2
Question B2: Study unit 3
Question B3: Study units 4 and 5

About half of each of these questions will test your insight into the way in which South Africa’s economic system, and especially the financial sector, operates.

Section C: In the third section (50% of the total) you will have to answer 25 multiple-choice questions. Examples of multiple-choice questions are included in the assignments.

Total time: Two hours.

Section C consists of 25 multiple-choice questions and each of these questions counts 2 marks. You have to answer the multiple-choice questions on a mark-reading sheet. Note that you can choose only ONE of the alternatives on the mark-reading sheet. If you mark more than one option, the computer will not mark that question.

For most of the 25 multiple-choice questions in the examination paper we provide one question or stem and a few possible answers. You are required to choose only the ONE correct answer from those alternatives. For example:

Direct financing takes place when ...

- [1] surplus units buy shares in the secondary market.
- [2] deficit units obtain a bank loan.
- [3] surplus units buy negotiable certificates of deposit in the primary market.
- [4] surplus units buy bonds in the primary market.
- [5] the SARB sells SARB debentures to banks.

The correct answer is of course [4]. See section 1.3.1 for a discussion of direct and indirect financing.

Note that the question in the stem may sometimes be in the negative, which means that you need to read it **VERY CAREFULLY**. Study the example below.

Which **one** of the following is **not** an example of a **money market** instrument?

- [1] treasury bill
- [2] bankers' acceptance
- [3] share
- [4] SARB debenture
- [5] negotiable certificate of deposit

The correct answer here is [3]. Because all the others are examples of money market instruments. See section 10.6 of the prescribed book for a discussion of money market instruments and chapter 12 for a discussion of the equity market.

The stem may also take the form of an incomplete statement. You then need to choose the correct phrase to complete the statement, for example:

A primary market for financial instruments is a market in which only instruments ...

- [1] issued by ultimate borrowers are traded.
- [2] issued by financial intermediaries are traded.
- [3] issued for the first time are traded.
- [4] listed on an exchange are traded.
- [5] with a maturity of one year or less are traded.

The correct answer is [3]. See section 1.3.4 of the prescribed book.

Some of the questions will provide a list of statements, more than one of which may be correct. You then have to choose the ONE combination that contains all the correct statements, for example:

Which of the following statements are correct?

A bankers' acceptance is ...

- [a] a primary instrument.
- [b] an indirect instrument.
- [c] a discount instrument.
- [d] an interest add-on instrument.

- [1] a c
- [2] a d
- [3] b c
- [4] b d

The correct answer is [1]. See section 10.6.3 of the prescribed book.

We wish you all the best with your studies.

Your lecturers

Mr M V Mhlongo
Tel: 012 429-4328
E-mail: Mhlonm@unisa.ac.za

Mrs CJ van Zyl
Tel: 012 429-4405
E-mail: vzylcj@unisa.ac.za