THE CHARTERED INSURANCE INSTITUTE

CII

AF4

Advanced Diploma in Financial Planning

Unit AF4 – Investment Planning

April 2017 Examination Guide

SPECIAL NOTICES

Candidates entered for the October 2017 examination should study this examination guide carefully in order to prepare themselves for the examination.

Practice in answering the questions is highly desirable and should be considered a critical part of a properly planned programme of examination preparation.

AF4 – Investment planning

Contents

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IMPORTANT GUIDANCE FOR CANDIDATES

Introduction

The purpose of this Examination Guide is to help you understand how examiners assess candidates' knowledge and their ability to apply this to a case study scenario. You can then use this understanding to help you in your preparation for the examination.

Before the examination

Study the syllabus carefully
This is available online at www.cii.co.uk or from Customer Service. All the questions in the examination are based directly on the syllabus. *You will be tested on the syllabus alone,* so it is vital that you are familiar with it.

There are books specifically produced to support your studies that provide coverage of all the syllabus areas, however you should be prepared to read around the subject. This is important particularly if you feel that further information is required to fully understand a topic or an alternative viewpoint is sought. The reading list which can be found with the syllabus provides valuable suggestions.

Note the assumed knowledge
For the Advanced Diploma in Financial Planning, candidates are assumed to have studied the relevant units of the Diploma in Financial Planning or the equivalent. This knowledge is set out on the relevant syllabus.

Read widely
If you do not have experience in advising clients whose financial needs are relatively sophisticated, *it is quite unrealistic to expect that the study of a single textbook will be sufficient to meet all your requirements.* While books specifically produced to support your studies will provide coverage of all the syllabus areas, you should be prepared to read around the subject. This is important, particularly if you feel that further information is required to fully understand a topic or an alternative viewpoint is sought. It is vital that your knowledge is widened beyond the scope of one book. The reading list which can be found with the syllabus provides valuable suggestions.

Make full use of the Examination Guide
This Examination Guide contains a full examination paper and model answers. The model answers show the types of responses the examiners are looking for and which would achieve maximum marks, *however, you should note that there are alternative answers to some question parts which would also gain high marks.* For the sake of clarity and brevity not all of these alternative answers are shown.

This guide and previous Examination Guides can be treated as 'mock' examination papers. Attempting them under examination conditions as far as possible, and then comparing your answers to the model ones, should be seen as an essential part of your exam preparation. The examiner's comments on candidates' actual performance in each question provide further valuable guidance. You can purchase copies of the most recent Examination Guides online at www.cii.co.uk. CII members can download free copies of older Examination Guides online at www.cii.co.uk/knowledge.

Know the layout of the tax tables
Familiarise yourself with the information contained within the tax tables printed at the back of each Examination Guide. These tax tables will be provided to candidates as part of the examination paper. The tax tables enable you to concentrate on answering the questions without having to worry about remembering all the information. *Please note that you are not allowed to take your own tax tables into the examination.*

Know the structure of the examination
Assessment is by means of a three-hour written paper in two sections. All questions are compulsory:

Section A consists of one case study, worth 80 marks. You will be expected to carry out a variety of tasks, after analysing the information provided.

Section B consists of two shorter case studies worth a total of 80 marks. Again you will be expected to carry out a variety of tasks based upon the information provided.

Each question part will clearly show the maximum marks which can be earned.

Appreciate the standard of the examination
Candidates must demonstrate that they are capable of advising clients *whose overall levels of income and capital require a more sophisticated scheme of investment* than is normally prepared by a level 4 qualified adviser. These clients require a critical appraisal of the various financial planning options available to them.

Read the Assessment information and Exam policies for candidates
The details of administrative arrangements and the regulations which form the basis of your examination entry are available online at www.cii.co.uk/qualifications/assessment-information/introduction/. This is *essential reading* for all candidates. For further information contact Customer Service.

In the examination

The following will help:

Spend your time in accordance with the allocation of marks:

- The marks allocated to each question part are shown on the paper;
- If a question has just two marks allocated, there are likely to be only one or two points for which the examiner is looking for, so a long answer is wasting valuable time.
- Conversely, if a question has 12 marks allocated, a couple of lines will not be an adequate answer. Always remember that if the paper is not completed, your chances of passing will be reduced considerably.
- Do not spend excessive time on any one question; if the time allocation for that question has been used up, leave some space, go on to the next question and return to the incomplete question after you have completed the rest of the paper, if you have time.

Take great care to answer the question that has been set.

- Many candidates leave the examination room confident that they have written a 'good' paper, only to be surprised when they receive a disappointing result. Often, the explanation for this lies in a failure to think carefully about what the examiner requires before putting pen to paper.
- Highlighting key words and phrases is a technique many candidates find useful.
- The model answers provided in this Examination Guide would gain full marks. Alternative answers that cover the same points and therefore answer the question that has been asked would also gain full marks.

Tackling questions

Tackle the three questions in whatever order feels most comfortable. Generally, it is better to leave any questions which you find challenging until you have attempted the questions you are confident about. Candidates' should avoid mixing question parts, (for example, 1(a)(i) and (ii) followed by 2(b)(ii) followed by 1(e)(i)) as this often leads to candidates unintentionally failing to fully complete the examination paper. This can make the difference between achieving a pass or a narrow fail.

It is vital to label all parts of your answer correctly as many question have multiple parts to them (for example, question 1(a) may have parts (i), (ii) and (iii)). Failure to fully distinguish between the separate question parts may mean that full credit cannot be awarded. It is also important to note that a full answer must be given to each question part and candidates should not include notes such as 'refer to answer given in 1(b)(i)'.

Answer format

Unless the question requires you to produce an answer in a particular format, such as a letter or a report, you should use 'bullet points' or short paragraphs. The model answers indicate what is acceptable for the different types of question.

Where you are asked to perform a calculation it is important to show **all** the steps in your answer. The majority of the marks will be allocated for demonstrating the correct method of calculation.

Provided handwriting is legible, candidates will **not** lose marks if it is 'untidy'. Similarly, marks are not lost due to poor spelling or grammar.

Calculators

If you bring a calculator into the examination room, it must be a silent, battery or solar-powered, **non-programmable** calculator. The use of electronic equipment capable of being programmed to hold alphabetical or numerical data and/or formulae is prohibited. You may use a financial or scientific calculator, provided it meets these requirements. The majority of the marks will be allocated for demonstrating the correct method of calculation.

EXAMINERS' COMMENTS

Candidates overall performance

The number of candidates taking this examination increased for this sitting and whilst most candidates completed a good level of preparation there were a significant number who were not well prepared for an advanced level examination.

Whilst parts of question 1 were difficult and it was not surprising that some candidates struggled, candidates also scored fewer marks than would have been expected on questions 2 and 3 which in general were areas that had been well tested before.

Few candidates scored highly on question 1 and in particular knowledge of index linked gilts was minimal with almost no candidates understanding precisely how the indexation process works for both coupons and capital.

Other parts of question 1 had been examined before such as the economic issues around low interest rates, the risks of bonds, duration and redemption yields. There was a calculation of an annual equivalent return that has been asked several times and many candidates are still unable to perform it correctly. Peer to peer was a new area although this was a fairly straight forward question that many answered well. Types of options and how they work has also been examined before and again well prepared candidates were able to score a reasonable number of marks here.

Questions 2 and 3 were answered better although given that many of the subjects had been well covered in the past, the marks were lower than anticipated. The questions on value investing and technical analysis were not answered well nor was the question on AIM listing requirements.

Calculations tended to be well answered other than the annual equivalent return calculation highlighted above.

Question 1

Part 1(a) tested knowledge of central bank policies and their impact in a world of very low interest rates. Most candidates were able to explain why lowering interest rates could stimulate consumer spending and many scored full marks. The reasons why the policies become less effective as rates approach zero were less well understood and explained.

Part 1(b) tested detailed knowledge of index linked gilts. The question was timely as inflation is starting to rise in the UK and so advisors should be considering a product that potentially offers some protection against this. Unfortunately the overwhelming majority of candidates had only a superficial knowledge of these products and most displayed significant gaps in respect of some basic features such as the fact that the principal is indexed as well as the coupons.

I would strongly urge all candidates to visit and study the UK Debt Management Office website at www.dmo.gov.uk which has invaluable information on all aspects of gilts and the process by which they are issued.

Part 1(b)(i) was answered poorly. Whilst many candidates were aware that coupons are index linked, almost no candidates understood the exact mechanism and simply stated that "RPI from 3 months previously is added to the coupon." In reality it is more complex as the coupon is increased by RPI since the date of issue using a factor calculated by dividing the current RPI figure by the figure at issue.

So if the annual percentage increase in RPI fell, for example from 3% to 2%, the coupon would still increase year on year.

Part 1(b)(ii) was not answered well and again almost no candidates understood what information the redemption yield for an index linked gilt conveys. The majority stated that the yield to redemption is negative "since the bond will be redeemed at 100 and so there will be a large capital loss at redemption." This is incorrect as the £100 principal will also be increased by RPI from the date of issue to the day of redemption.

The published yield to redemption for an index linked gilt is a real yield. In the example from the examination paper the yield of -1.7% means the return would be 1.7% below inflation over the period to redemption. So whilst gilt will not provide full inflation protection, buying at the current price will not necessarily create a loss at redemption.

In part 1(b)(iii), most candidates were able to score some marks on the disadvantages of the gilt compared to the savings account mentioning lack of Financial Services Compensation Scheme (FSCS) protection (although the gilts are unlikely to default) and the fact there could be a loss of capital although again most achieved this mark for the wrong reasons believing the gilt would be redeemed at 100.

Part 1(b)(iv) was answered incorrectly by almost all candidates. The breakeven inflation rate is where the yield on a conventional gilt will match that on the equivalent index linked gilt. In this case if long term inflation was 3.1% then the -1.7% real yield on the index linked gilt will be the same as the 1.4% redemption yield on the 2037 conventional gilt.

In part 1(b)(v) most candidates were able to identify some of the risks of the index linked gilt although many simply listed risks of bonds in general and so mentioned risks such as inflation which would not be a problem although credit was given for mentioning possible deflation risks which would reduce coupons. Similarly marks were not awarded for liquidity risk as gilts are one of the most liquid investments, and mentioning credit risk was not sufficient to gain a mark as the risk of default is deemed very low.

In part 1(b)(v)(i), it was pleasing that many candidates now have a much better understanding of duration than when this topic was last examined and was specifically commented upon in the Examination Guide at the time. Most candidates knew that modified duration specifically related to the sensitivity of the gilt to interest rate changes. A few even queried whether it is correct to measure this in years as the case study did, rather than as a percentage - it is still measured in years, the correct alternative units would be percentage change per percentage change (in interest rates) per year. Many candidates identified the lower coupon as a reason that it would take longer to repay the outlay of buying the gilt now although fewer commented on the price which was also higher.

Part 1(c) was a fairly straight forward question and most candidates identified that interest rates and inflation are not expected to change significantly linked to low expected economic growth.

Part 1(d) saw most candidates able to calculate the yield to redemption. This has been examined several times in the past and mentioned in previous Examination Guides.

However the calculation of the annual equivalent return is still proving a major difficulty for the majority of candidates, even to the extent that several wrote the correct formula FV=PV(1+r)^n and input the relevant figures, yet were then unable to make any further progress towards the answer which in this case involved calculating the interest rate or r in the formula. I can only suggest that future candidates focus effort here as it is a calculation that is useful in many day to day situations and has regularly appeared in this exam. Most candidates cannot afford to lose the 5 marks available and several could have reached the pass mark by knowing this calculation.

In the final part most candidates knew that coupons from gilts are taxed as income and many also knew that the personal savings allowance can be used. Capital gains are free of tax.

Part 1(e)(i) witnessed few candidates who scored high marks on the how gilts are issued although the better prepared were able to identify auctions and tenders or the REPO market. Again the DMO website is an invaluable resource in this area and details the results of each type of gilt issue.

In part 1(e)(ii), many candidates identified that for a gilt to have a negative yield at issue it would have to be issued above par assuming this was not offset by the coupon payments. A few incorrectly felt that gilt owners should pay coupons to the Bank of England.

All the index linked gilts issued by the Bank of England in 2016 have been above par and at negative real redemption yields. As a result of the auction process many conventional gilts are issued at prices more than 100 (and some less), however the higher coupons have meant that none have been issued at a negative redemption yield so far.

Part 1(f) was generally well answered with many candidates identifying a sterling call option and how it would work to achieve the client's objective by producing a gain that would offset the loss on the exchange rate rather than in some way fixing the exchange rate as many candidates incorrectly stated. Some lost marks by explaining a call option in general terms by stating it would expire "at a fixed point in the future" rather than linking it to the specific need identified in the case study for 6 months time.

In the second part most scored marks for identifying the current price of the underlying asset, the time remaining and the strike price with the better candidates also mentioning volatility.

Part 1(g), whilst this is a new area most candidates were able to identify potential drawbacks such as lack of Financial Services Compensation Scheme (FSCS) protection, liquidity, issues around the credit or default risk of the underlying loans and also potential counterparty risks should the platform run into difficulty as has happened to some US platforms.

Question 2

Question 2 covered some areas that are regularly tested in AF4 and in general most candidates scored more highly on this question compared to question 1.

Part 2(a) was well answered. The Capital Asset Pricing Model formula is regularly tested and most candidates were able to score full marks. A few continue to be let down by their mathematical skills for example by writing out the correct formula with the correct figures and then making errors such as adding beta (outside the bracket) to the equity risk premium (inside the bracket) rather than multiplying them together or by adding the risk free return to beta before multiplying beta with the equity risk premium.

Most candidates could explain what alpha represented in the first part and then went on to explain why the fund may not be suitable in the final part.

Part 2(b), whilst most candidates identified that value investing seeks to buy undervalued shares, few explained how the value is assessed or went on to explain that this relies on markets not being efficient and that the reason they will subsequently increase in value is that they are reassessed by the market in the longer run. Warren Buffet or Benjamin Graham have expressed this by saying in the short term markets are like a voting machine (some shares are popular or unpopular) but in the longer term the market is more like a weighing machine and company fundamentals will eventually be recognised.

Understanding portfolio management approaches such as value investing, momentum or assessing quality of earnings is an important skill for anybody who has to select funds for clients and candidates should be better prepared in this area.

In Part 2(c)(i) many candidates were not specific enough with their description of the P/E ratio and no marks were awarded for simply stating that this is calculated as price divided by earnings. The key was to explain what this represents i.e. how many years of earnings it would take to recoup your purchase (the share price). This will be affected by future earnings expectations so a high P/E ratio could be explained by the fact that earnings are expected to rise or by the quality and consistency of the earnings.

In part 2(c)(ii) most candidates correctly calculated the ratio for Megacap.

In part 2(c)(iii) again many candidates identified one or two reasons for the high P/E ratio and the answer here overlapped a little with part (c)(i) in respect of future earnings expectations. An alternative explanation could have been that the share is simply overvalued or there are one off accounting reasons affecting the current figure.

Part 2(c)(iv) was answered well and most candidates correctly identified the difference between using forecast earnings and actual earnings and the drawback of each in relation to future performance.

Some candidates were not specific enough in their answers stating that a trailing ratio used “historic figures” or a forward ratio used “future figures” or the “future P/E ratio.” The question is specifically asking about the P/E ratio so it is estimated future earnings or historic reported earnings that are required.

In part 2(d) the drawbacks of ratios have been tested before and most candidates were able to score 3 or 4 of the marks available.

Question 3

In part 3(a)(i) a small number of candidates did not attempt this question believing the only way to calculate an expected return is via the Capital Asset Pricing Model. The case study will always provide all the information required to answer the questions that follow. The calculation of the expected return was simply a weighted average of the two possible returns given in the case study (a 75% chance of a 20% gain or a 25% chance of a 15% loss). A similar calculation has previously appeared regularly in AF4 for example when calculating returns of a portfolio when the expected return and the weightings for several asset classes were provided. It is a straight forward calculation and most candidates who attempted it scored full marks.

Part 3(a)(ii) was another relatively straight forward calculation although some candidates were confused by whether they should have used 1 or 2 standard deviations from the mean (or expected return) and others took square roots in error (the standard deviation is already the square root of the variance).

In part 3(a)(iii) a number of candidates made an error on the market capitalisation calculation and were out by a factor of 100 (multiplying 68 million by £85 rather than 85p). Care should always be taken to get units of measurement correct.

In part 3(b) most candidates were able to identify Gozout as being most appropriate as it had the higher expected return and whilst volatility was higher this would be within the client’s attitude to risk.

Part 3(c)(i) was generally answered well and most candidates were able to list 5 or 6 potential charges.

Parts 3(c)(ii) and (iii), in the first part almost all candidates identified lower charges and control over investment decisions as being reasons for the client making their own investment decisions. Fewer went on to say that a more concentrated portfolio could outperform or may benefit from avoiding some of the pitfalls of investment managers who have the pressure of short term performance comparisons to manage.

Many candidates scored well on the potential reasons for using a manager such as expertise, diversification, less administration and access to institutional and other funds not available to a retail investor.

Part 3(d) was less well answered. Whilst almost all candidates knew that AIM shares carried higher risk, many simply stated that they were generally smaller and younger companies without specifically answering the question about listing requirements i.e. no minimum market capitalisation, no minimum percentage of shares in public hands and no trading history are required.

In part 3(e) those candidates who recognised the term technical analysis were generally able to score one or two marks by mentioning plotting charts and looking at patterns or trends although few explained it in sufficient detail to score full marks.

Many candidates were not aware of this approach and scored no marks. Again the techniques that fund managers use to select shares should be well understood by AF4 candidates.

THE CHARTERED INSURANCE INSTITUTE

AF4

Advanced Diploma in Financial Planning

Unit AF4 – Investment planning

April 2017 examination

SPECIAL NOTICES

All questions in this paper are based on English law and practice applicable in the tax year 2016/2017, unless stated otherwise in the question, and should be answered accordingly.

It should be assumed that all individuals are domiciled and resident in the UK unless otherwise stated.

Candidates should answer based on the legislative position immediately BEFORE the 2017 budget.

Instructions

- Three hours are allowed for this paper.
- **Do not begin writing until the invigilator instructs you to.**
- **Read the instructions on page 3 carefully before answering any questions.**
- Provide the information requested on the answer book and form B.
- You are allowed to write on the inside pages of this question paper, but you must **NOT** write your name, candidate number, PIN or any other identification anywhere on this question paper.
- The answer book and this question paper must **both be handed in personally by you** to the invigilator before you leave the examination room. **Failure to comply with this regulation will result in your paper not being marked and you may be prevented from entering this examination in the future.**

Unit AF4 – Investment planning

Instructions to candidates

Read the instructions below before answering any questions

- **Three hours** are allowed for this paper which carries a total of 160 marks as follows:

  - Section A: 80 marks
  - Section B: 80 marks

- You are advised to spend approximately 90 minutes on Section A and 90 minutes on Section B.

- You are strongly advised to attempt **all** questions to gain maximum possible marks. The number of marks allocated to each question part is given next to the question and you should spend your time in accordance with that allocation.

- Read carefully all questions and information provided before starting to answer. Your answer will be marked strictly in accordance with the question set.

- You may find it helpful in some places to make rough notes in the answer booklet. If you do this, you should cross through these notes before you hand in the booklet.

- It is important to show all steps in a calculation, even if you have used a calculator.

- If you bring a calculator into the examination room, it must be a silent, battery or solar-powered, non-programmable calculator. The use of electronic equipment capable of being programmed to hold alphabetic or numerical data and/or formulae is prohibited. You may use a financial or scientific calculator, provided it meets these requirements.

- Tax tables are provided at the back of this question paper.

- Answer each question on a new page and leave six lines blank after each question part.

Subject to providing sufficient detail you are advised to be as brief and concise as possible, using note format and short sentences on separate lines wherever possible.

SECTION A

This question is compulsory and carries 80 marks

Question 1

Read carefully all information provided in the case study before attempting the questions. Your answers should take into account the clients circumstances as set out in the case study. Please carry out ALL of the tasks (a), (b), (c), (d), (e), (f) and (g) which follow.

Paul has recently retired. He receives a pension from his previous employer of £20,000 per annum, which increases in line with the UK Retail Prices Index. Paul also has £80,000 cash on deposit. The interest earned on Paul's savings is used to supplement his pension and pay for holidays, but now only provides £320 per annum gross. He is aware that this is due to the current very low Bank of England base rate and would like to understand more about how these decisions are taken.

Paul has also agreed the sale of a property in Italy for 200,000 euros which is due to complete in six months time. He is concerned that the value of the pound may strengthen in the meantime and reduce his sterling proceeds.

Paul is a cautious investor and owns £5,000 nominal in the following three UK Treasury Gilts that he bought at issue (see Table 1 below).

Table 1

Name	Redemption date	Price per £100 nominal (£)	Yield to redemption (%)	Modified duration (years)
3.75% Treasury Gilt 2020	01.03.2020	111	0.14	2.8
4% Treasury Gilt 2027	01.03.2027	126		9
4.25% Treasury Gilt 2037	01.03.2037	145	1.4	14.5

Paul has heard that government bond yields are negative in some countries and he wants to know the effect this would have on his existing UK Treasury Gilts if the yields on UK government bonds became negative.

Paul is also concerned about possible future inflation and the effect it may have on his savings and investments. He is considering using £10,000 of his savings to buy the following UK Index-linked Gilt as he understands this may give him protection against future inflation (see Table 2 below).

Table 2

Name	Redemption date	Price per £100 nominal (£)	Yield to redemption (%)	Modified duration (years)
0.125% Index-linked Treasury Gilt 2037	01.03.2037	146	-1.7	20

Paul is also aware that a peer to peer lending platform may give him a higher interest rate than he is earning on his savings and would like to understand more about investing in this area.

Questions

To gain maximum marks for calculations you must show all your workings and express your answers to two decimal places.

(a) **(i)** State **four** ways in which a low Bank of England base rate may stimulate consumer spending. **(4)**

(ii) Explain why, as interest rates approach zero, this policy may fail to stimulate spending. **(4)**

(b) **(i)** The 0.125% Index-linked Treasury Gilt 2037 has a three month indexation lag.

Explain to Paul how the amount of the next coupon will be determined. (*No calculations are required.)* **(5)**

(ii) Explain to Paul why the yield to redemption on the 0.125% Index-linked Treasury Gilt 2037 is negative. **(4)**

(iii) State **four** disadvantages of investing in the 0.125% Index-linked Treasury Gilt 2037 compared to retaining the money in Paul's savings account. **(4)**

(iv) Calculate, **showing all your workings**, the implied breakeven inflation rate to 01.03.2037, based on the current Treasury Gilt yields. **(3)**

(v) List and explain **four** risks of purchasing the 0.125% Index-linked Treasury Gilt 2037. **(8)**

(vi) Explain what is meant by modified duration and why the 0.125% Index-linked Treasury Gilt 2037 has a longer modified duration than the 4.25% Treasury Gilt 2037. **(4)**

(c) Paul has read that the Gilt yield curve is flat at present.

Explain briefly what a flat yield curve implies for future interest rates and the prospects for the economy. **(3)**

(d) **(i)** Calculate, **showing all your workings**, the gross interest paid to Paul in pounds each year on the 4% Treasury Gilt 2027. **(3)**

(ii) Paul purchased the 4% Treasury Gilt 2027 exactly six years ago at the issue price of £100 nominal. **(5)**

Calculate, **showing all your workings**, the percentage annual equivalent rate of capital gain over that period. *(Ignore coupons.)*

(iii) Calculate, **showing all your workings**, the redemption yield on the 4% Treasury Gilt 2027. **(5)**

(iv) Explain briefly to Paul how both the interest and any capital gains on his UK Gilts are taxed. **(3)**

(e) **(i)** State **four** ways the Bank of England may use to issue Gilts into the market. **(4)**

(ii) Explain briefly to Paul how a new Gilt issue would be priced in order for the interest rate to redemption to be negative. **(3)**

(iii) The Bank of England have issued a three year Gilt today at a negative interest rate. **(3)**

Explain to Paul the likely effect this would have on his 3.75% Treasury Gilt maturing in 2020.

(f) Paul has approached a foreign exchange dealer in order to purchase an option to hedge against sterling rising against the euro before his property sale completes.

(i) Identify the type of sterling option Paul would need to buy and explain briefly how it would achieve his objectives. **(6)**

(ii) State the factors that determine the price of an option. *(Ignoring fees or commission.)* **(4)**

(g) Explain **five** risks of lending money via a peer to peer lending platform compared to using a savings account. **(5)**

Total marks available for this question: 80

SECTION B

Both questions in this section are compulsory and carry an overall total of 80 marks

Question 2

Read carefully all information provided in the case study before attempting the questions. Your answers should take into account the clients circumstances as set out in the case study. Please carry out ALL of the tasks (a), (b), (c) and (d) which follow.

David is an additional rate taxpayer who you have assessed as having a cautious attitude to risk. David is considering retiring within the next year and will need a supplementary income from his investments at that point.

David currently holds a portfolio of individual UK shares together with a single holding in the Asteroid UK Growth fund. He is concerned about the performance of the Asteroid UK Growth fund as it has underperformed the market return of 10% over the last year. The current risk free rate of return is 0.5% per annum.

Table 1

	Annual return	Beta	Dividend yield
Asteroid UK Growth fund	8.7%	1.14	0.3%

David has read about value investing and wants to understand how this can be assessed in respect of his largest individual shareholding in Megacap plc. The sector within which Megacap plc operates currently has an average price earnings ratio of 35.

Table 2

	Profit attributable to ordinary shareholders (£million)	Number of ordinary shares (million)	Share price (p)
Megacap plc	1,079	4,150	1,455

Questions

*To gain maximum marks for calculations you **must** show **all** your workings and express your answers to **two** decimal places.*

(a) **(i)** Explain briefly to David what is meant by a fund's alpha. **(4)**

(ii) Calculate, **showing all your workings**, the alpha for Asteroid UK Growth fund. **(5)**

(iii) Comment on the Asteroid UK Growth fund's alpha and beta and, given David's circumstances, explain why he may wish to consider selling the fund. **(6)**

(b) Explain briefly what is meant by value investing and the assumption that underpins the concept. **(3)**

(c) **(i)** Explain briefly what the price earnings ratio measures and factors that could influence the market's views. **(4)**

(ii) Calculate, **showing all your workings**, the price earnings ratio for Megacap plc. **(5)**

(iii) Suggest **four** possible reasons why the price earnings ratio of Megacap plc, calculated in **part (c) (ii)** above, is different from the sector average. **(4)**

(iv) Explain briefly what is meant by a forward and a trailing price earnings ratio together with the main drawback of using **each** measure. **(4)**

(d) Explain briefly **five** limitations of only using ratio analysis in making investment decisions. **(5)**

Total marks available for this question: 40

Question 3

Read carefully all information provided in the case study before attempting the questions. Your answers should take into account the clients circumstances as set out in the case study. Please carry out ALL of the tasks (a), (b), (c), (d) and (e) which follow.

Trudi, an experienced investor with an adventurous risk profile, wishes to invest for medium to long-term growth.

Trudi has read an article which recommended two shares selected using technical analysis (see Table 1 below). Trudi has also visited a stockbroker who has suggested that she should invest in a portfolio of equities and investment trusts through a platform on a discretionary basis.

Trudi has asked you to analyse the companies she has identified and to comment on the stockbroker's suggested approach.

Table 1

Company	Activity	Number of shares in issue (million)	Share price (p)	Index	Expected return %	Standard deviation
Glitterz	Jewellery	150	106	FTSE fledgling	7.75	16
Gozout	Night clubs	68	85	AIM		21

The article suggested that Gozout has a 75% chance of gaining 20% and a 25% chance of losing 15%.

Questions

*To gain maximum marks for calculations you **must** show **all** your workings and express your answers to **two** decimal places.*

(a) **(i)** Calculate, **showing all your workings**, the expected return of Gozout. **(6)**

(ii) Calculate, **showing all your workings**, the range between which approximately 68% of the returns for Gozout would be expected to fall. (Assume a normal distribution.) **(4)**

(iii) Calculate, **showing all your workings**, the market capitalisation of Gozout. **(2)**

(b) State, giving your reasons, which of the two shares you recommend Trudi should purchase. **(3)**

(c) **(i)** State all the charges which Trudi could be subject to if she adopts the stockbroker's suggested approach. **(7)**

(ii) Identify **four** advantages of Trudi self-selecting her own shares. **(4)**

(iii) Identify **four** advantages of Trudi using the stockbroker's suggested approach. **(4)**

(d) Trudi has noticed that some of the stockbroker's suggested shares are AIM listed.

Explain to Trudi the main differences in listing requirements between AIM and the main market, and explain the implication in terms of risk. **(6)**

(e) Explain how technical analysis is used to make investment decisions. **(4)**

Total marks available for this question: 40

NOTE ON MODEL ANSWERS
The model answers given are those which would achieve maximum marks. However, there are alternative answers to some question parts which would also gain high marks. For the sake of clarity and brevity not all of these alternative answers are shown. An oblique (/) indicates an equally acceptable alternative answer.

Model answer for Question 1

(a) (i) *Candidates would have gained full marks for any four of the following:*
- Savings interest rates are low.
- Reduces incentive to save.
- Cheaper borrowing/lower mortgage costs.
- Gives more disposable income/encourages borrowing.
- Increases asset prices increasing wealth/feel good factor.

(ii) *Candidates would have gained full marks for any four of the following:*
- Those relying on savings have less to spend
- Debt interest may not fall/falls may be relatively small.
- Banks less willing to lend due to lower margins.
- Debt maybe repaid instead of spending.
- Other political or economic factors could outweigh/lower consumer confidence
- There may be time lags due to fixed term debts/savings.

(b) (i)
- Take RPI value.
- 3 months prior to coupon date.
- Divide by RPI set at issue date.
- Apply to the coupon.
- Divided by two/paid half yearly.

(ii)
- High demand.
- Expectation of rising future inflation.
- Gilt trading above par after allowing for indexation since issue.
- Low coupon does not offset real loss.

(iii) **Disadvantages**
- Buying and selling costs.
- Before maturity rely on market price/price volatility.
- No FSCS compensation.
- Possible capital loss.

(iv)
- Implied inflation is 1.4 - (-1.7) = 3.1%

(v) *Candidates would have gained full marks for any eight of the following:*

- Interest rate risk.
- Rising interest rates reduce value of bond.

- Reinvestment risk.
- At maturity bonds with a similar index linked return may not be available.

- Capital risk.
- May be a loss on sale or maturity.

- Legislative/taxation risks.
- Changes in tax or legislation may affect value of bond.

- Deflation risk.
- Income payments could fall.

(vi)

- Modified duration indicates sensitivity to interest rates.
- Index-linked gilt has a lower coupon.
- Index-linked gilt higher purchase price.
- So index-linked gilt has a longer time to return capital invested.

(c)

- Longer dates bonds have same interest rates as shorter dated/interest rates not expected to rise.
- Expected that inflation will not increase.
- Slow economic growth/Low economic growth.

(d) **(i)** 5000 x 0.04 = £200.00

(ii) 126/100 = (1 + R) ^ 6
(1 + R) = 1.26 ^ 1/6
R = (1.0393 – 1) x 100
R = 3.93%

(iii) Running yield = 4/126 = 3.17%
Loss per year = 26/10 = £2.60
Loss per year as a percentage = 2.6/126 = 2.06%

Yield to redemption = (3.17% - 2.06%) = 1.11%

(iv)

- Coupons taxed as income.
- Basic rate taxpayer has £1,000 tax free interest/personal savings allowance.
- Capital gains tax free.

(e) **(i)** *Candidates would have gained full marks for any four of the following:*

- Auction.
- Tender.
- Conversion.
- Tap.
- Syndication.
- Repo.

(ii)

- Issued at a price higher;
- than par/nominal/redemption price.
- No coupon or low coupon which does not offset the capital loss

(iii)

- Price would go up.
- Redemption yield goes down bringing it in line with the newly issued bond.
- Income stays the same.

(f) **(i)**

- Sterling call option/euro put option.
- Buy sterling/sell euros.
- At a fixed pre-determined price.
- In 6 months.
- No obligation/can let it lapse.
- Gain in option price will offset potential currency loss on property sale.

(ii)

- Market value of the underlying asset/spot price.
- Strike price/in or out of the money.
- Expiry date/time to expiry.
- Expected volatility.
- Type of option American or European.

(g)

- No Financial Services Compensation Scheme (FSCS) protection.
- Lack of liquidity/may not have immediate access to money.
- Default/credit risk/difficult to assess lending criteria/lack of transparency
- Counterparty/platform solvency risk.
- New industry so no experience of how it may withstand an economic downturn.

Model answer for Question 2

(a) **(i)**
- Difference between expected return and actual return.
- Return not explained by market movements and beta.
- Risk adjusted return measure.
- Value added/stock picking ability of manager/out performance of manager.

(ii) 8.7 – [0.5 + 1.14 x (10-0.5)]
8.7 – [0.5 + 1.14(9.5)]
8.7 – [0.5 + 10.83]
8.7 – 11.33 = -2.63

(iii)
- Manager has not added alpha/value/underperformed.
- Higher risk
- Than the market/beta is greater than one;
- outside his ATR as he is cautious.
- Low income;
- David needs income shortly.

(b) *Candidates would have gained full marks for any three of the following:*
- Identifies stocks trading at less/undervalued;
- than intrinsic/fundamental value.
- The market is inefficient/overreacts to good or bad news.
- Takes a longer term view/return to fair value/mean reversion.

(c) **(i)**
- Number of years/number of times (multiple)
- to return investors capital from earnings.
- Future profits/earnings expectations/company's ability to grow its profits/earnings
- Quality and consistency of earnings.

$$\text{EPS} = \frac{\text{Profit}}{\text{No. Shares}} = \frac{1079}{4150} \times 100 = 26\text{p}$$

$$\text{PE} = \frac{\text{Share Price}}{\text{EPS}} = \frac{1455}{26} = 55.96$$

(iii)
- Quality and consistency of earnings.
- Expectation of future profits/earnings.
- Exceptional items in the accounts/takeover target.
- Shares are overpriced.

(iv)
- Forward P/E uses future earning/profit guidance.
- And is an estimate/subjective so may not be met.

- Trailing P/E uses last 12 months earnings/profit.
- Past performance is not necessarily a guide to future.

(d)

- Changes in accountancy policies over time.
- Based on historic figures and no guide to the future.
- Financial statements contain subjective elements.
- Need to compare to sector/peers/trends over time.
- Cannot consider in isolation/need to look at other factors

Model answer for Question 3

(a) **(i)** 0.75 x 20% = 15%
0.25 x -15% = -3.75%
15% – 3.75% = 11.25%

(ii) 2/3 of returns will fall between +1 and -1 standard deviation from the mean.

11.25 – 21 = - 9.75%
11.25 + 21 = 32.25%

(iii) 68 million x 0.85 = £57.8 million

(b)

- Gozout.
- Better expected return.
- Higher volatility suits ATR.

(c) **(i)**

- Platform/custodian/wrapper charge.
- Discretionary manager's initial charge/set up fee.
- Discretionary manager's AMC.
- Underlying fund managers' charge.
- Dealing fees/commissions
- Bid offer spread.
- Stamp Duty/PTM levy.

(ii) **Advantages of own shares selection:**

- Control/involvement in investment decisions/voting rights at AGM.
- Concentrated portfolio can mean better performance.
- Not subject to manager's short term performance pressures.
- Lower charges.

(iii) *Candidates would have gained full marks for any four of the following:*
Advantages of stockbroker managed portfolio:
- More diversification.
- Wider availability of possible investments.
- Manager's expertise/Information availability.
- Less management/administration.

(d)
- No minimum capitalisation required for AIM/main market has a minimum capitalisation.
- No minimum percentage of shares in public hands for AIM/main market minimum 25%.
- AIM no trading history required/main market 3 years trading history required.
- AIM broader range of accounting standards applicable/main market IFRS or equivalent.
- AIM more relaxed reporting time-frame.
- AIM higher risk.

(e)
- Based only on share price/excludes fundamental analysis.
- Uses charts of past share price.
- Identifies patterns/trends that predict future performance
- assumes these are repeated.

All questions in the April 2017 paper will be based on English law and practice applicable in the tax year 2016/2017, unless stated otherwise and should be answered accordingly.

The Tax Tables which follow are applicable to the April 2017 examinations. The Tax Tables for the October 2017 examination can be found online on the CII website: www.cii.co.uk

INCOME TAX

RATES OF TAX	2015/2016	2016/2017
Starting rate for savings*	0%	0%
Basic rate	20%	20%
Higher rate	40%	40%
Additional rate	45%	45%
Starting-rate limit	£5,000*	£5,000*
Threshold of taxable income above which higher rate applies	£31,785	£32,000
Threshold of taxable income above which additional rate applies	£150,000	£150,000
Child benefit charge from 7 January 2013:		
1% of benefit for every £100 of income over	£50,000	£50,000

**Restricted to savings income only and not available if taxable non-savings income exceeds starting rate band.*

MAIN PERSONAL ALLOWANCES AND RELIEFS

	2015/2016	2016/2017
Income limit for Personal Allowance *§*	£100,000	£100,000
Personal Allowance (basic if born after 5 April 1948) *§*	£10,600	£11,000
Personal Allowance (if born between 6 April 1938 and 5 April 1948) *§*	£10,600	£11,000
Personal Allowance (if born before 6 April 1938) *§*	£10,660	£11,000
Married/civil partners (minimum) at 10% *†*	£3,220	£3,220
Married/civil partners at 10% *†*	£8,355	£8,355
Transferable tax allowance for married couples/civil partners	£1,060	£1,100
Income limit for age-related allowances *§*	£27,700	£27,700
Blind Person's Allowance	£2,290	£2,290
Enterprise Investment Scheme relief limit on £1,000,000 max	30%	30%
Seed Enterprise Investment relief limit on £100,000 max	50%	50%
Venture Capital Trust relief limit on £200,000 max	30%	30%

§ the Personal Allowance reduces by £1 for every £2 of income above the income limit irrespective of age (under the income threshold).
† where at least one spouse/civil partner was born before 6 April 1935.

	2015/2016	2016/2017
Child Tax Credit (CTC)		
- Child element per child (maximum)	£2,780	£2,780
- family element	£545	£545
Threshold for tapered withdrawal of CTC	£16,105	£16,105

NATIONAL INSURANCE CONTRIBUTIONS

Class 1 Employee	Weekly	Monthly	Yearly
Lower Earnings Limit (LEL)	£112	£486	£5,824
Primary threshold	£155	£672	£8,060
Upper Earnings Limit (UEL)	£827	£3,583	£43,000

Total earnings £ per week	CLASS 1 EMPLOYEE CONTRIBUTIONS
Up to 155.00*	Nil
155.01 – 827.00	12%
Above 827.00	2%

**This is the primary threshold below which no NI contributions are payable. However, the lower earnings limit is £112 per week. This £112 to £155 band is a zero rate band introduced in order to protect lower earners' rights to contributory State benefits e.g. Basic State Pension.*

Total earnings £ per week	CLASS 1 EMPLOYER CONTRIBUTIONS
Below 156.00**	Nil
156.01 – 827.00	13.8%
Excess over 827.00	13.8%

*** Secondary earnings threshold.*

Class 2 (self-employed)	Flat rate per week £2.80 where profits exceed £5,965 per annum.
Class 3 (voluntary)	Flat rate per week £14.10.
Class 4 (self-employed)	9% on profits between £8,060 - £43,000. 2% on profits above £43,000.

PENSIONS

TAX YEAR	LIFETIME ALLOWANCE	ANNUAL ALLOWANCE
2006/2007	£1,500,000	£215,000
2007/2008	£1,600,000	£225,000
2008/2009	£1,650,000	£235,000
2009/2010	£1,750,000	£245,000
2010/2011	£1,800,000	£255,000
2011/2012	£1,800,000	£50,000
2012/2013	£1,500,000	£50,000
2013/2014	£1,500,000	£50,000
2014/2015	£1,250,000	£40,000
2015/2016	£1,250,000	£40,000 *§*
2016/2017	£1,000,000	£40,000

ANNUAL ALLOWANCE CHARGE

20% - 45% member's tax charge on the amount of total pension input in excess of the annual allowance.

MONEY PURCHASE ANNUAL ALLOWANCE	2015/2016	2016/2017
	£10,000*	£10,000*

LIFETIME ALLOWANCE CHARGE

55% of excess over lifetime allowance if taken as a lump sum.

25% of excess over lifetime allowance if taken in the form of income, which is subsequently taxed under PAYE.

§ increased to £80,000 from 6 April - 8 July 2015. If not used, can be carried forward to 9 July 2015 - 5 April 2016, subject to a maximum of £40,000.

** transitional rules apply to the calculation for pre/post 8 July 2015 position.*

CAPITAL GAINS TAX

EXEMPTIONS	2015/2016	2016/2017
Individuals, estates etc	£11,100	£11,100
Trusts generally	£5,550	£5,550
Chattels proceeds (restricted to five thirds of proceeds exceeding limit)	£6,000	£6,000

TAX RATES	2015/2016	2016/2017
Individuals:		
Up to basic rate limit	18%	10%
Above basic rate limit	28%	20%
Surcharge for residential property and carried interest	0%	8%
Trustees and Personal Representatives	28%	20%
Entrepreneurs' Relief* – Gains taxed at:	10%	10%
Lifetime limit	£10,000,000	£10,000,000

**For trading businesses and companies (minimum 5% employee or director shareholding) held for at least one year.*

INHERITANCE TAX

RATES OF TAX ON TRANSFERS	2015/2016	2016/2017
Transfers made on death after 5 April 2015		
- Up to £325,000	Nil	Nil
- Excess over £325,000	40%	40%
Transfers made after 5 April 2015		
- Lifetime transfers to and from certain trusts	20%	20%

A lower rate of 36% applies where at least 10% of deceased's net estate is left to a registered charity.

MAIN EXEMPTIONS		
Transfers to		
- UK-domiciled spouse/civil partner	No limit	No limit
- non-UK-domiciled spouse/civil partner (from UK-domiciled spouse)	£325,000	£325,000
- UK-registered charities	No limit	No limit
Lifetime transfers		
- Annual exemption per donor	£3,000	£3,000
- Small gifts exemption	£250	£250
Wedding/civil partnership gifts by		
- parent	£5,000	£5,000
- grandparent	£2,500	£2,500
- other person	£1,000	£1,000

100% relief: businesses, unlisted/AIM companies, certain farmland/building
50% relief: certain other business assets

Reduced tax charge on gifts within 7 years of death:

- Years before death	0-3	3-4	4-5	5-6	6-7
- Inheritance Tax payable	100%	80%	60%	40%	20%

CAR BENEFIT FOR EMPLOYEES

The charge for company car benefits is based on the carbon dioxide (CO_2) emissions. There is no reduction for high business mileage users.

For 2016/2017:

- The percentage charge is 7% of the car's list price for CO_2 emissions of 50g/km or less.
- For cars with CO_2 emissions of 51g/km to 75g/km the percentage is 11%.
- For cars with CO_2 emissions of 76g/km to 94g/km the percentage is 15%.
- Cars with CO_2 emissions of 95g/km have a percentage charge of 16% and thereafter the charge increases by 1% for every complete 5g/km to a maximum of 37% (emissions of 200g/km and above).

There is an additional 3% supplement for diesel cars not meeting Euro IV emission standards. However, the maximum charge remains 37% of the car's list price.

Car fuel The benefit is calculated as the CO_2 emissions % relevant to the car and that % applied to a set figure (£22,200 for 2016/2017) e.g. car emission 100g/km = 17% on car benefit scale. 17% of £22,200 = £3,774.

1. **Accessories** are, in most cases, included in the list price on which the benefit is calculated.
2. **List price** is reduced for capital contributions made by the employee up to £5,000.
3. **Car benefit** is reduced by the amount of employee's contributions towards running costs.
4. **Fuel scale** is reduced only if the employee makes good **all** the fuel used for private journeys.
5. **All car and fuel benefits** are subject to employers National Insurance contribution's (Class 1A) of 13.8%.

PRIVATE VEHICLES USED FOR WORK

	2015/2016 Rates	2016/2017 Rates
Cars		
On the first 10,000 business miles in tax year	45p per mile	45p per mile
Each business mile above 10,000 business miles	25p per mile	25p per mile
Motor Cycles	24p per mile	24p per mile
Bicycles	20p per mile	20p per mile

MAIN CAPITAL AND OTHER ALLOWANCES

	2015/2016	2016/2017
Plant & machinery (excluding cars) 100% annual investment allowance (first year)	£500,000	£200,000
Plant & machinery (reducing balance) per annum	18%	18%
Patent rights & know-how (reducing balance) per annum	25%	25%
Certain long-life assets, integral features of buildings (reducing balance) per annum	8%	8%
Energy & water-efficient equipment	100%	100%
Zero emission goods vehicles (new)	100%	100%
Qualifying flat conversions, business premises & renovations	100%	100%

Motor cars: Expenditure on or after 01 April 2016 (Corporation Tax) or 06 April 2016 (Income Tax)

CO_2 emissions of g/km:	75 or less*	76-130	131 or more
Capital allowance:	100% first year	18% reducing balance	8% reducing balance

**If new*

CORPORATION TAX

	2015/2016	2016/2017
Standard rate	20%	20%
Small companies rate	20%	N/A
Small companies limit	£300,000	N/A
Effective marginal rate	20%	N/A
Upper marginal limit	£1,500,000	N/A

VALUE ADDED TAX

	2015/2016	2016/2017
Standard rate	20%	20%
Annual registration threshold	£82,000	£83,000
Deregistration threshold	£80,000	£81,000

MAIN SOCIAL SECURITY BENEFITS

		2015/2016	2016/2017
		£	£
Child Benefit	First child	20.70	20.70
	Subsequent children	13.70	13.70
	Guardian's allowance	16.55	16.55
Employment and Support Allowance	Assessment Phase		
	Age 16 – 24	Up to 57.90	Up to 57.90
	Aged 25 or over	Up to 73.10	Up to 73.10
	Main Phase		
	Work Related Activity Group	Up to 102.15	Up to 102.15
	Support Group	Up to 109.30	Up to 109.30
Attendance Allowance	Lower rate	55.10	55.10
	Higher rate	82.30	82.30
Retirement Pension	Single	115.95	119.30
	Married	185.45	190.80
Single Tier State Pension	Single	N/A	£155.65
Pension Credit	Single person standard minimum guarantee	151.20	155.60
	Married couple standard minimum guarantee	230.85	237.55
	Maximum savings ignored in calculating income	10,000.00	10,000.00
Bereavement Payment (lump sum)		2,000.00	2,000.00
Widowed Parent's Allowance		112.55	112.55
Jobseekers Allowance	Age 18 - 24	57.90	57.90
	Age 25 or over	73.10	73.10
Statutory Maternity, Paternity and Adoption Pay		139.58	139.58