

Examiner's Report

June 2018 Session

**Paper 4
Business Economics and
Financial Mathematics**

General Comments

This paper consisted of three sections. Section A contained multiple-choice questions; Section B had two compulsory short questions and Section C had three optional long questions. The questions tested candidates' understanding and knowledge of both economics and financial mathematics. The overall pass rate was lower than that in the previous session, resulting from the significantly worse performance in the compulsory questions.

Section A – 15 Multiple-choice Questions

The questions in this section were compulsory and divided into two parts. The first part consisted of ten questions, each correct answer of which was worth one mark. The latter part had five questions, which was worth two marks each. The general performance was about the same as that in the previous session. As these multiple-choice questions were designed to cover the whole syllabus and the calculation techniques involved were fundamental to business decision-making purpose, a solid performance in this section would reflect that candidates had prepared satisfactorily for the examination and had a reasonable understanding of the basic issues and techniques in the syllabus.

An efficient and effective way for candidates to gain a basic understanding of the whole syllabus and the types of questions that they might face in the examination is to go through the entire study text on this Paper. Relevant sections of the supplementary readings (including the economics book) assigned for this Paper should also be studied whenever necessary.

Section B – 2 Compulsory Questions

Question B1

This question, consisting of four separate parts, tested candidates' definitional and basic computational knowledge of the three key measures of the performance of an economy: aggregate output (as measured by gross domestic product, GDP), inflation/deflation (as measured by GDP deflator) and unemployment. Basic questions related to macroeconomic (monetary and fiscal) policy issues were also asked. The overall performance in this question was very poor.

Part (a) tested candidates' familiarity with the basic definitions of nominal GDP, real GDP, GDP deflator and their (numerical) relationships with each other. By definition, GDP deflator is calculated as the ratio of nominal GDP to real GDP. In other words, the real GDP of country A can be calculated by dividing the value of the country's nominal GDP by its GDP deflator. By comparing the real gross domestic products of country A over a given period of time (i.e. from the beginning to the end of the period), any change in the real GDP can be determined. The overall performance in this part of the question was acceptable as most candidates were able to somehow show that the real GDP remained unchanged.

Part (b) asked the candidates to define recession. The importance of this question was that the commonly adopted definition of recession (defined as two consecutive quarters of fall in real GDP) has become a piece of must-know common knowledge in a modern economy as evidenced by its being commonly reported in news media.

Part (c) tested the candidates' knowledge of the general goals of macroeconomic policy when it comes to affecting the performance of an economy (in terms of the three measures asked in part (a)). Once again, the aim of the question was to check if candidates have the basic knowledge to appreciate statements such as "the economy is doing well" regularly mentioned in the news media. The performance in parts (b) and (c) was very poor, reflecting candidates' lack of practical knowledge that is of fundamental relevance and importance to most business decision-making process.

Part (d), made up of two related sub-parts, focused on the relation between unemployment and inflation (the so-called Philips Curve). Part (d)(i) was essentially on the definition of the curve while part (d)(ii) was its implications of macroeconomic policy choices. The performance was poor.

Candidates are strongly advised to read not only the study text but also the supplementary reading materials on economics assigned for this Paper.

Question B2

This question was made up of two separate parts, covering topics in mathematics in finance and statistics respectively.

Part (a), divided into two related sub-parts, was a straightforward calculation-based question on capital budgeting. As this type of calculation has been examined frequently before, the rather poor performance was unexpected and reflected a serious lack of preparation on such an important topic.

Part (b), made up of three sub-parts, was designed to test candidates' knowledge of confidence interval (an important area in inferential statistics). The structure of the questions was progressive in nature, starting with a definitional question on what confidence interval is before moving on to basic calculations and straightforward application of the relevant concepts. The performance was poor. Most candidates were not even able to get the formula used in part (b)(ii)'s calculation correct. This reflected the lack of preparation by candidates. Candidates are strongly advised to not only go through the relevant sections in the study text, but also do practice questions from other sources.

Section C – 3 Optional Questions

Question C1

This question, made up of two separate parts, was designed to test candidates' ability to apply the basic concepts of time value of money and basic calculation techniques.

Part (a) required candidates to perform standard and straightforward future value calculations involving single and multiple-cash-flows. The question was straightforward in the sense that it did not even require interest rate conversions before applying the future value formulae.

Part (b), composed of five related sub-parts, was concept-based (except for part (b)(iii)). Parts (b)(i) and (b)(ii) tested candidates' understanding of time value of money and its implications. Part (b)(iii) involved basic NPV calculations. Parts (b)(iv) and (b)(v) were centred around the concept of internal rate of return ("IRR"), requesting candidates to define, explain and, without carrying out the calculations, write down the relevant IRR equation that would answer the question in part (b)(iii).

The overall performance was very poor, which was rather surprising as similar questions have been asked many times in previous sessions. It seems that the lack of preparation by candidates still applies to this question. To prepare for this type of question, the most effective way is to study the past examination papers in detail.

Question C2

This question, consisted of two separate parts, was designed to test candidates' understanding of the basic concepts in microeconomics and the features of various market structures.

Part (a) was divided into four sub-parts, of which only the first involved calculations. Specifically, part (a)(i) involved simple calculations of equilibrium values. Part (a)(ii) tested candidates' understanding of how the concepts of the law of demand and supply were related to demand and supply functions (i.e. mathematical representations of demand and supply curves). Part (a)(iii)

required candidates to apply the demand and supply model to determine the impact of an event on the equilibrium price and output of a product. Part (a)(iv) was designed to test candidates' understanding of how market equilibrium was achieved and its implications. The key point to note here was that market equilibrium would be reached when the market price was allowed to freely adjust (i.e. in the absence of external intervention such as price control by government). At equilibrium, the amount of goods demanded and supplied is the same at the current price level (i.e. the market is cleared) and there would be no excess demand (shortage) or excess supply (surplus) of the goods.

Part (b), composed of two sub-parts, focused on the features of different market structures and the equilibrium of a monopolistic market. Part (b)(i) asked candidates to identify the key features of the three common market structures (i.e. perfectly competitive, monopolistic and oligopolistic markets). Part (b)(ii) asked candidates to compare the pricing and output features of the perfectly competitive and monopolistic markets using a diagram.

The overall performance in this question was very poor. Given the question was straightforward and standard in its format, the only reason that could explain the poor performance was once again a lack of preparation. Candidates are strongly advised to go through in detail the study text and, if necessary, the relevant reading materials assigned for this Paper.

Question C3

This question entirely focused on descriptive statistics and was divided into three parts.

Part (a), divided into two sub-parts, asked candidates to calculate the mean and the median of a given distribution. The overall performance was acceptable.

Part (b) asked candidates to calculate the standard deviation of the distribution. Only a few candidates were able to put down the formula and apply it correctly.

Part (c) was framed to test candidates' understanding of the basic features of the statistics asked in parts (a) and (b). The overall performance was good.

Despite this question appearing to be the easiest among the three in Section C and being most attempted, the performance was very poor. The only likely reason is that candidates' preparation was far below the minimally required level.

[END OF EXAMINER'S REPORT]