# Examiners' commentaries 2016–17

## CO3353 Software engineering project management – Zones A and B

### General remarks

Performance on this examination was much improved this year. Candidates provided clear and succinct answers to their questions. However, you are reminded of the importance of presenting your work in an appropriate manner. For this examination, please start your answer to a new question or a sub-part of a question on a new page. You are also reminded once again of the importance of ensuring that your answer is legible.

### Comments on specific questions – Zone A

#### Question 1

This question consisted of a number of sections and subsections.

a. Good answers concentrated on describing the benefits of Agile programming. Candidates were not required to go into the detail of how Agile programming is undertaken. What was needed was a discussion of the benefits that arise from using this method rather than the detail of the method itself.

b. i. There was not just one correct answer to this question. Some candidates provided the description of a process model as it is defined in the subject guide. However, a wide variety of other definition were offered, and as long as they were appropriate they were accepted.

   ii. Good answers included a discussion, not only of the work breakdown structure as the decomposition of tasks and activities, but also on the interdependencies involved in undertaking the work. Some excellent answers also provided examples.

c. i. Answers to this question were disappointing. Candidates provided vague definitions that did not illustrate that they understood the concept of a milestone in the context of a software development project.

   ii. Again, candidates were confused as to what is meant by a review stage. Three obvious examples of review stages where milestones can be drawn up can be found in the subject guide.

#### Question 2

a. This part of the question was worth a high number of marks and therefore required more than just the definition of the terms of the acronym FURPS. Excellent answers explained that a given area of functionality must be implemented in accordance with a given set of non-functional requirements, and discussed the tensions that might arise. Good answers not only provided definitions of the terms, they then went on to give details of what each of these terms means in terms of quality. Some candidates were evidently confused between the concepts of reliability and performance.

b. In general, candidates were able to provide clear descriptions of the factors that determine how a network is constructed. One shortcoming was that many answers were unable to describe all four factors, as required by the question, and only offered two.

## Question 3

a. This was a straightforward question. Candidates described a range of acceptable cost estimation methods. A common error was to provide insufficient detail. As the question was worth 13 marks it was expected that candidates would not simply mention the type of cost estimation method that could be used, but also describe it in some detail. Excellent answers included issues such as the advantages and disadvantages of each method.

b. Excellent answers to this question not only identified the appropriate risks but also structured their answers appropriately, providing three headings; namely, product, project and customer's business. Underlining these headings provided clarity, and a professional appearance. It was then important that four potential risks be identified in each category. Some candidates only provided two or three examples per category and lost marks accordingly.

## Question 4

Very few candidates opted to answer this question.

a. This was a straightforward question requiring a detailed discussion of checkpoint, highlight and exception reports.

b. This question was also straightforward. The five questions that need to be asked before using UML graphical models can be found in the subject guide.

## Question 5

a. Answers to this question were disappointing. Good answers started with a definition of what a standard is and then gave examples of various standards. Some candidates then went on to correctly discuss issues such as that standards ensure readability and completeness, accuracy and consistency, and that they impact on decision making and communicate changes.

b. This was a very popular question and candidates generally scored high marks. Comprehensive descriptions were given of unit testing, component, system and acceptance testing.

## Comments on specific questions – Zone B

### Question 1

a. Good answers to this question demonstrated that the candidate had read the question carefully, and referred to the **principles** of the Agile approach. Candidates were not required to describe the Agile approach in depth but they needed to focus on the underlying principles, such as that it requires the activities which add value to a product or service to be defined from the customer's perspective and aims to eliminate wasteful activities that do not add value; that it seeks to understand how value is delivered to the customer as an end-to-end process, etc.

b. Most candidates provided a good description of the fact that a work breakdown structure (WBS) decomposes the project into phases, decomposes the phases into activities, and the activities into tasks and subtasks. Excellent answers also explicitly referred to the fact that these structures also describe the interdependencies between work. Some excellent answers also discussed the use of a WBS to ensure that analysis of factors such as risks or competences is comprehensive. Many candidates correctly identified Gantt charts as a good example of a WBS.

## Question 2

a. In answering this question, candidates were required to discuss any two activities undertaken in requirements engineering. As the number of marks awarded for this question was high, it required an in-depth discussion of the activities rather than a superficial description. Many candidates correctly selected two activities from elicitation, specification, validation and documentation of requirements.

b. This question was not always well answered. Candidates scored high marks where they discussed the fact that the requirements specification document is the basis of the contract, and then went on to focus on why it is important to make the contract as accurate as possible from the outset of a project.

c. Most candidates correctly stated that a good requirements specification should be:

- **clear**: no ambiguities or confusing cross references to other documents
- **concise**: no unnecessary detail, repetition or confusing cross-references to other documents
- **correct**: attributed, with no conjecture, paraphrasing or unsubstantiated opinion
- **complete**: verified as part of the verification and validation process.

## Question 3

a. This was a straightforward question. Most candidates could clearly describe the functional, non-functional and system requirements. However, there was some confusion in discussing user requirements. Many candidates did not seem to realise that these are the functional and non-functional requirements that describe the business goals for the system.

b. There was a tendency to wander off the point in answering this question. The components of a costing calculation for software development are discussed in the subject guide, including issues such as the scale of the problem, the efficiency of staff, unit cost of staff, project-specific equipment costs and overheads.

c. Candidates need to provide concrete definitions that illustrate that they understand the concept of a milestone in the context of a software development project. You can find material relating to milestones in the subject guide; for example in Chapter 1 including Figure 1.2.

## Question 4

a. This was a straightforward question and was generally satisfactorily answered. The question required descriptions of four types of architectural genre. Each of these are covered in the subject guide, and most candidates were able to describe them well.

b. Good answers to this question started by providing a definition and explanation of client-server architecture, with credit for an appropriate diagram. Excellent answers went on to discuss both the advantages and disadvantages of the client-server genre.

## Question 5

a. This was a very straightforward question. It carried a high number of marks and therefore required not only identifying five Belbin roles but also elaborating what is meant by each of these roles. These could include any of the following:

- Monitor–evaluator
- Coordinator

- Resource investigator
- Implementer
- Completer–finisher
- Team worker
- Shaper
- Specialist.

b. Good answers to this question not only identified which role candidates thought applied to them, but also included some discussion and an example of why this role was applicable.