BCS Higher Education Qualification

Professional Graduate Diploma

October 2021

EXAMINERS' REPORT

Software Engineering 2

General comments
The overall pass rate for this sitting of the paper was good. The syllabus continues to gradually evolve in line with new developments in Software Engineering. The examiners note, however, that candidates are often unfamiliar with the issues addressed by these changes. Syllabus changes are always published in advance of a topic being examined in a paper. Candidates would benefit from sitting Software Engineering at Level 5 before sitting this paper.

Question number: 1
Syllabus area: 1.2 Lifecycle models
Total marks allocated: 25
Examiners' Guidance Notes
This question had the highest number of candidates attempting it. Part a) All candidates answered this section well, demonstrating good knowledge of the waterfall and prototyping process models, often matched suitability to the application areas listed. Part b) Most candidates were able to describe the different approaches to prototyping, but had difficulty differentiating both on a practical level. Part c) Many candidates were able to list some of the disadvantages of evolutionary prototyping, but were unable to relate these to the subsequent maintenance of such systems.

Question number: 2
Syllabus area: 2.3 Software metrics
Total marks allocated: 25
Examiners' Guidance Notes
This was the third most popular question attempted by candidates Part a) It is evident from the answers given that knowledge of software metrics is very fragmented and are not well understood. This is very much the case for process and product metrics. There is some good knowledge demonstrated of coupling and cohesion, but not as metrics; and the same can be said of software quality characteristics and sub characteristics. Part b) In this section most candidate responses were often at the superficial level of "common sense" and, as a result had trouble in explaining the quality sub characteristics.

Question number: 3
Syllabus area: 1.3 Requirements engineering
Total marks allocated: 25
Examiners' Guidance Notes
This question was attempted by a majority of candidates. Part a)(i): This part was answered sufficiently well – in particular, elicitation techniques. However, modern approaches to Requirements engineering were not sufficiently discussed. Part a)(ii): Only a small number of candidates mentioned modelling techniques. Part a)(iii): Only a small number of candidates discussed requirements validation techniques and tools. Some candidates discussed testing techniques instead. Part a)(iv): This part caused many problems. Some candidates discussed e.g., project management issues instead. Part b): Many answers were irrelevant by focusing on e.g., 'individual tools' such as video conferencing, word processors, etc.

Question number: 4
Syllabus area: 2.2 Software architecture
Total marks allocated: 25
Examiners' Guidance Notes
This question was not attempted by many candidates. Part a): Answers were too general, lacked details and were partly irrelevant. Part b): This part was answered sufficiently well.

Question number: 5
Syllabus area: 1.5 Software evolution
Total marks allocated: 25
Examiners' Guidance Notes
This question was attempted by just under half of candidates. In general, this question was answered reasonably well. Part a): Most candidates gave a reasonable overview of Lehman's laws. However only a small number of candidates were able to discuss their applicability to real-world software practice. Part b): Many candidates discussed the complexity of modern systems, hence the applicability of some Lehman's laws (especially of those on software size and complexity) to these systems. However, only a small number of candidates observed that some other laws were less applicable.