BCS Higher Education Qualification

Diploma

March 2020

EXAMINERS' REPORT

Software Engineering

General comments
The number of candidates for this sitting was very low due to the Covd-19 pandemic. The overall pass rate for the paper was similar to that seen in previous sittings, however, given the small numbers this may not be significant.

Question number: A1
Syllabus area: 1.1 The nature of software 1.2 Theoretical models, 1.3 Motivation for the development of the Software Engineering discipline
Total marks allocated: 25
Examiners' Guidance Notes
Part a of this question was generally well answered, answers which gained lower marks could have been improved by reference to simple methods to improve the software process such as the use of requirements gathering tools and the use of rapid prototyping. Some answers tended to focus on sophisticated methods or detailed descriptions of methods but did not reference the particular aspect of the software crisis they were supposed to alleviate. Part b of the question was generally well answered with the exception of a few answers which simply listed the standard software development waterfall model and not the particulars of the component-based model. Better marks would be gained by explicitly mentioning the use of requirements modification and system validation as specific component-based methods.

Question number: A2
Syllabus area: 2.1 The multidisciplinary nature of software design, 2.2 Team work, 2.3 Productivity
Total marks allocated: 25
Examiners' Guidance Notes
Part a of this question was very well answered with almost all of the candidates able to adequately describe six factors. Part b was generally well answered. Higher marks would be gained for mentioning the fundamental growth of communication paths being the limiting factors and highlighting formal/informal structures. Part c of this question was not generally well answered. Many candidates did not cite an advantage and disadvantage but concentrated on a single aspect. By spending too much time on a single aspect of the question candidates could only gain a maximum of half marks. Answers also showed that some candidates did not fully appreciate the benchmarking technique in relation to productivity so answers tended to be vague.

Question number: A3
Syllabus area: 6.1 Project estimating and project planning, 6.3 Total cost of system ownership
Total marks allocated: 25
Examiners' Guidance Notes
This question was the least popular in section A of the paper and in general, answers to the question reflected a looser understanding of the topics. Part a of the question required a description of three planning documents. Many candidates provided the titles of some typical project documents but did not go on to describe those documents. Better marks could be gained by providing a description of the document outlining the purpose of the plan in the project. Part b (1) This part of the question was well attempted and many candidates provided a reasonable explanation of the purpose of the TCO study. Part b (2) of this question showed that for most candidates there was little idea of how a TCO study would fit the scenario. For those candidates who did fully attempt the question very full and complete answers that emphasised the possible cost implications of the scenario were evident and gained high marks.

Question number: B5
Syllabus area: 1.2 Theoretical models, 5.3 Software reuse and evolution
Total marks allocated: 25
Examiners' Guidance Notes
This question was very well answered by most candidates. Part a of the question showed candidates had a good appreciation of CBSE context. Higher marks would be obtained for noting that the component is defined by its public interfaces and explicitly mentioning the implications of that. Part b This part of the question gained higher marks for candidates who mentioned both benefits and risks some marks were lost by concentrating on either benefits or risks. Part c Answers to tis part showed a good appreciation of problems in integrating COTS.

Question number: B6
Syllabus area: 1.5 The cost of quality, 2.4 Testing, 5.1 Computer Aided Software Engineering (CASE) tools
Total marks allocated: 25
Examiners' Guidance Notes
Part a of this question proved challenging for some candidates. Answers tended to be based on generic testing strategies and did not fully address the question which asks for an outline based on an OO based system. Marks were gained for outlining tests and testing methods full marks were only gained for specifically relating the strategy to an OO system. Marks were maximised by addressing the appropriate tests for each possible phase, such as identifying defect testing as focused on unit and integration phases and validation testing. Many answers did not stress such observations. Part b Answers to this part tended to focus on either an advantage or disadvantage of the approach taken and not both as the question required. Many answers provided a description of static analysis and regular inspections tools and this gained some marks. However the evaluation tended to be focused more one approach rather than a comparison of both approaches.