BCS Higher Education Qualification

Diploma

November 2020

EXAMINERS' REPORT

Software Engineering 1

General comments[1]
This sitting of the paper produced a pleasingly high pass rate.

Question number: A1
Syllabus area: Quality
Total marks allocated: 25
Examiners' Guidance Notes
Part a was universally well answered gaining most candidates full marks for identifying three questions that could be asked to assess software fitness for purpose. In part b, most candidates could list six quality attributes and gained the full credit for this part. In part c, most candidates were able to correctly identify the trade-off between improving some quality factors at the cost of other software qualities. In part d, most candidates were able to state three attributes that might be given less attention in an effort to produce early product release and could subsequently identify two characteristics that might be affected. All candidates who attempted this question achieved a pass mark for the question.

Question number: A2
Syllabus area: Software maintenance
Total marks allocated: 25
Examiners' Guidance Notes
Part a) was generally well answered by many candidates with a few answers indicating confusion over maintenance and general software testing and providing answers that reflected corrective testing of software bugs and adaptive testing to better integrate the product rather than adapting to new requirements or new environments and answers therefore tended to development aspects rather than focusing on the maintenance aspects of software that is post development. In part b), many candidates were able to correctly identify reasons for software to require maintenance, however a number of answers reflected the need to fix existing problems with software rather than emphasize aspects of evolving user needs or requirements. Part c) was generally well answered with just a few candidates giving answers which struggled to coherently identify more than one significant reason for software systems to become more difficult to maintain over time.

Question number: A3
Syllabus area: Software testing
Total marks allocated: 25
Examiners' Guidance Notes
This question was the least popular in section A of the paper with only a small number of attempts. For part a) answers tended to focus on testing techniques such as white box/black box and did not fully address the question of stating the benefits to the use of integration testing for complex or time -critical projects. Many candidates lost marks by simply explaining what integration testing is and not discussing any benefits. In part b), candidates were generally able to cite alpha/beta testing and give a reasonable explanation. Some candidates offered an explanation of a generic testing technique and gained few marks. In general, only a few candidates took into account the context of the question being about testing a product that is to be used for a wide variety of customers and thus the alpha/beta techniques would be the optimal type. Part c) posed particular problems for many with only a few candidates able to identify a stress testing strategy and correctly describe stress testing methods or techniques that might be used. Many answers tended to cite standard test techniques that might as an artefact detect the software response to abnormal input. Only a few candidates were able to emphasize the need to test for extreme circumstances.

Question number: B4
Syllabus area: Software reuse
Total marks allocated: 25
Examiners' Guidance Notes
Part a) of this question showed that many candidates had a good appreciation of the factors that need to be considered in software reuse. Some answers were brief and not explanatory as required by the question and subsequently gained lower marks. Part b) of the question required candidates to list both benefits and risks some candidates tended to focus on either benefits or risks and subsequently lost marks by listing more than three for one and either neglecting or only listing one for the other. Part c)showed that candidates in general had some understanding of problems in integrating COTS. Some answers didn't focus on the question and described benefits of integrating COTS with other packages. Overall performance in this question showed a good appreciation of software reuse and issues related to COTS

Question number: B5
Syllabus area: Risk
Total marks allocated: 25
Examiners' Guidance Notes
Part a) of this question was answered well with almost all candidates able to describe four types of risk. Marks were lost in some cases where candidates didn't give a complete description of four types of risk but concentrated on lengthy descriptions of two or three. Part b) was not as fully well answered as other parts with many candidates only able to state a difference based on mirroring the question wording itself. A minority of candidates did fully outline the difference. This question did highlight some degree of confusion between these risk strategies. Part c) posed some difficulty for some candidates who wrongly described development risks and internal risks as business risks and did not correctly identify business risk as external risk based on business criteria.

Question number: B6
Syllabus area: Software models
Total marks allocated: 25
Examiners' Guidance Notes
Part a) of this question was very well answered by many candidates. Candidates showed a good appreciation of the five stages. Marks were lost by having terse descriptions or not providing a complete description of each of the stages. Part b) of this question did highlight a degree of confusion between incremental project delivery and the use of prototypes with many answers giving the advantages and disadvantages of using prototypes rather than increments. Most candidates were able to describe some aspects of the incremental approach although few gained maximum marks. Part c) was reasonably well answered by most candidates in some cases providing the same form of answer to part b). Most of the answers did not achieve full marks. In some cases the confusion between an iterative approach and prototype purpose tended to provide circular descriptions.