BCS Higher Education Qualification

Professional Graduate Diploma

September 2019

EXAMINERS' REPORT

IT and the Environment

General comments
Candidates for this paper continue to show reasonable knowledge of several syllabus topics. A number of candidates still focus on stating facts relevant to the questions. This demonstrates some knowledge, but the answers would be improved by discussing the implications of the facts within a given question. As part of the preparation for the module, candidates are encouraged to review material from the suggested books as well as current news articles about environmental issues related to IT.

Question number: A1
Syllabus area: Environmental Impact Analysis (3.1)
Total marks allocated: 25
Examiners' Guidance Notes
This question was intended to give candidates an opportunity to use their knowledge in an applied situation. While many similar situations they encounter are likely to have less scope, the scenario offers them the chance to provide a broad response to the limiting of environmental impact. Some candidates lost marks because they failed to provide the required number of elements in the design which was requested (five). In other cases, examples were too close to each other to allow the full range of marks to be awarded to both. Those candidates who scored best in this question provided well formatted answers which avoided repetition and used the full scope offered by the question.

Question number: A2
Syllabus area: Legislative and Regulatory Provisions (1.1)
Total marks allocated: 25
Examiners' Guidance Notes
The use of standard formatted documents in organisations is widespread and this question offered candidates the opportunity to demonstrate their ability to format such material appropriately while delivering material which is core to the subject. The choice of standards depended to some extent on the location, experience and operational context of the individual candidate. In part a) the format is that of a report to the Board of a finance organisation, and the more successful candidates provided well-structured responses which contained appropriate solutions tuned to an organisation based in the UK. Those candidates who gave thinly defined answers did not score well. Part b) gave the opportunity to provide a more generally informative text, which in the best caseswere close to the standard which would be expected commercially. Once again, however, a significant number of candidates did not approach this standard of content.

Question number: B3
Syllabus area: IT in the Service of Power Generation & Energy Conservation (6.1)
Total marks allocated: 25
Examiners' Guidance Notes
This question asked candidates to identify the various parts of a smart grid system, and to explain how these parts interact to deliver the objectives of such a grid. The most effective answers to this question combined a diagram of a generic smart grid with textual discussion of the interactions between the various parts and of the ways in which prediction and measurement can be used to optimise the grid. The impact of prediction is particularly important where variable energy sources (wind, solar) are included, with some candidates noting that the difficulty of storage of such energy requires particular attention, Other high-scoring answers addressed factors such as the different "start-up" times for different energy sources, and the opportunities to use them most effectively to balance supply and demand. Part (b) further invited candidates to consider the consumer (energy user) side of the process. Effective answers included identification of matters such as variable tariff to drive user behaviour and of the role of the smart meter in providing usage patterns (behaviour) to the supplier, allowing future demand to be predicted, and to inform future supply and tariff mechanisms.

Question number: B4
Syllabus area: The Environmental Impact of Information Systems (4.1, 4.2)
Total marks allocated: 25
Examiners' Guidance Notes
This question defined a world-wide business organisation and asked for a commentary on three proposed changes to working methods. Part (b) then invited candidates to provide reasons for proposing two of those three options for implementation. The three proposed changes were typical of those which are considered in such cases, and their advantages and disadvantages are known and well discussed. For Part (a), a balance between each of the three changes was expected, with both benefits and drawbacks presented in a format suitable for a business management audience. Part (b) provided an opportunity to offer more reasoned analysis of two of the methods, allowing candidates to exercise their personal judgement and to provide arguments in favour of their selection. In questions of this type, marks are gained on the quality of the reasons given for a choice, not the choice itself.

Question number: B5
Syllabus area: The Environmental Effects of Communication Systems (5.1)
Total marks allocated: 25
Examiners' Guidance Notes
This question set a scenario of a community planning a climate measuring and prediction system. Strong answers described a design which clearly referenced the characteristics included in the question and showed how those characteristics affected the design and implementation of the system. Less effective answers provided a more generic solution, without taking the detail into account. The lack of external connectivity was removed in Part (b), which asked candidates to consider how the ability to communicate with other systems, networks and communities. Answers were expected to describe the benefits of data sharing, again the most effective answers were set in the context of the question scenario, rather than a more generic response.