

**BCS Higher Education Qualification**

**Professional Graduate Diploma**

**October 2021**

**EXAMINERS' REPORT**

**IT and the Environment**

**General comments**

There were several very good answers, showing an understanding of a range of issues relevant to the topic.

There is some improvement to the discussion provided, but there were some questions, e.g. A1 and A2, where the answers only addressed one aspect of what had been asked. We encourage candidates to consider how to clearly demonstrate their knowledge of the different aspects of the question. A lot of discussion about only one aspect of the question is likely to mean lower marks.

The discussion about Remote Sensing appears to be an area that candidates seem less prepared for. Candidates should revise this more.

**Question number:** A1

**Syllabus area:** Environmental Impact Analysis, 3.1 and The Environmental Impact of Information Systems, 4.1, 4.2.

**Total marks allocated:** 25

**Examiners' Guidance Notes**

The question was about measures that a company could take to reduce its carbon footprint, as well as considering the commercial benefits of the measures.

Candidates showed awareness of issues such as improving efficiencies, extending the lifetime of equipment, use of data centres and virtualisation. Candidates received lower marks where the answers lacked sufficient detail. This could have been because the answer didn't identify five appropriate measures, or because there was limited discussion of the measure or the commercial benefits.

**Question number:** A2

**Syllabus area:** Environmental Impact Analysis, 3.1, The Environmental Impact of Information Systems 4.1, 4.2, The Environmental Effects of Communication Systems, 5.1.

**Total marks allocated:** 25

**Examiners' Guidance Notes**

The question asked how candidates would plan and carry out an Environmental Impact Analysis for five given areas of IT service provision.

It was clear from the answers that candidates demonstrated good knowledge of the subject areas in most cases. Whilst a lot of answers could identify environmental issues regarding power

consumption and the consumption of other resources, there was more that could have been discussed. For example, few answers considered issues about the materials involved in the items or the life expectancy aspects.

**Question number:** B3

**Syllabus area:** Environmental Impact Analysis, 3.1. Environmental Impact of Information Systems, 4.1.

**Total marks allocated:** 25

**Examiners' Guidance Notes**

Part a) asked about the environmental impact of the lifecycle for a smartphone.

Generally, answers to this part showed an appreciation of different parts of a lifecycle and the environmental issues that may come from this. Some answers focused more on the issues of the regular update of technology. Other answers showed a wider awareness of issues, including discussion of issues such as raw materials, transportation, packaging and recycling.

Part b) asked about the 'circular economy'.

There was a mixture of answers to this part of the question. It was worth more marks than Part a), but some of the answers were much shorter with less detail. Better answers considered the pace of change in technology and the ways that companies may evaluate how their use of equipment could fit into the ideas of the 'circular economy'.

**Question number:** B4

**Syllabus area:** Remote Sensing, 2.1, 2.2.

**Total marks allocated:** 25

**Examiners' Guidance Notes**

Part a) asked about the use of remote sensing to monitor the polar regions.

Most answers were able to provide a definition of remote sensing and talk about one or two ways that may be used – LiDAR, satellite images were typical examples. Some consideration could have been given to using multiple types of sensors to help provide a better overall picture.

Part b) asked about the design of a low-cost remote sensing device that could be used to monitor agricultural land use.

A range of answers were given and reasonable design proposals that could perform some useful sensing were provided. Some answers focused more on the list of sensors but had little discussion about how they may be used. Better answers could talk about the data that would be obtained and how that would be stored and transmitted using an available communications network.

**Question number:** B5

**Syllabus area:** Power Management, 4.2.

**Total marks allocated:** 25

**Examiners' Guidance Notes**

This question asked about the use of energy calculators to assess the energy use of a company's IT service.

Part a) Having used a calculation, the question asked about how the results could be presented to the company's management.

Answers considered the relevance of some of the assumptions in the calculations and whether they were an appropriate fit for the company. It would have been good to see some consideration of how to validate the answers from the calculator, e.g. comparing results with other calculators or with information published by companies.

Part b) asked about the relevance of using a feature to change some of the estimates in the cost calculation.

Answers commented on the opportunity to have calculations that take into account the specific ways that the company works, e.g. average working hours for equipment. It would have been good to see some discussion about the effort involved to gather some information and whether that would have made a significant difference to the results.