

## BCS Higher Education Qualification

### Certificate

22/06/2020

### EXAMINERS' REPORT

Information Systems Section A March 2020

<b>Question number: 1</b>
<b>Syllabus area: 1.1, 1.5, 2.1, 2.3, 2.4</b>
<b>Total marks allocated: 30</b>
<b>Examiners' Guidance Notes</b>
<p>Part a – two different approaches were expected. A large complicated system would need a structured system analysis method with strict guidelines, however a more modern approach using an Agile approach for example was acceptable. The former would include the stages of a structured method with the tools and techniques described. The Agile approach is an iterative development using a SCRUM framework of sprints with emphasis on small iterations with user feedback. Prototyping would be more appropriate for a small uncomplicated system.</p> <p>Part b – the definition of each element, function and example of a dataflow diagram, entity life history and a class diagram should be provided.</p>

<b>Question number: 2</b>
<b>Syllabus area: 1.1, 1.2, 1.3, 2.1, 3.1</b>
<b>Total marks allocated: 30</b>
<b>Examiners' Guidance Notes</b>
<p>Part a – there should be distinct differences between the provision of software internally, using a software house and buying a software package.</p> <p>Part b – functions and use of the software packages can be found on the internet.</p> <p>Part c – technical expertise in different areas are often required in large companies, qualifications may be different but skills are similar.</p>
<b>Question number: 3</b>
<b>Syllabus area: 1.1, 2.3, 3.1</b>
<b>Total marks allocated: 30</b>
<b>Examiners' Guidance Notes</b>
<p>Part a – normalisation provides stable relations and is used as a basis for database design avoiding redundancy, insertion, update and deletion anomalies using the various stages.</p> <p>Part b – relational modelling is a top down approach and entities and relationships identified. These can be found from current forms.</p> <p>Part c – entities and normalised relations equate to physical tables related using primary and foreign keys.</p> <p>Part d – an implementation plan is produced to deal with the preparation for a live system and the details which need to be prepared prior to going live.</p>

**Question number: 4**

**Syllabus area:1.1, 1.3, 2.1, 3.1, 3.2, 3.3**

**Total marks allocated:30**

**Examiners' Guidance Notes**

Part a – the answer should indicate how internet revolution has improved communication, ecommerce, social interaction, global access etc.

Part b – businesses have similar use of the internet such as advertising, selling, buying but with differing targets.

Part c – because of the wide use of the internet externally and internally within a business or for personal use, security issues have exploded with many threats and possible solutions. These threats and solutions should be discussed.

**Question number: 5**

**Syllabus area: 1.2 Simple statistical measures**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

“A picture paints a thousand words”

This was a question about visualisation of data or using simple charts to represent information.

Candidates drew these charts reasonably well, most forgetting the keys to guide understanding the chart.

The biggest issue was that for 4 marks I was being drawn a chart and told exactly what the chart was showing me.

What I need was a greater understanding of the limitations of those charts.

For example, if you had 1000 items to display you would not use a pie chart, if you had 3 data points you would not use a scatter chart etc.

I was looking for more insight into the reasons why we use charts, not here is a chart and this is what is shows. I should be able to work that out from the chart.

**Question number: 6**

**Syllabus area: 3.2 Management of computer systems, staffing**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

A poorly answered question in general

This question was about the role of a project manager.

The majority of answers merged the roles of project manager, systems analyst, business analyst, coders, tester etc into one job.

In extremely small companies (where the IT department is less than 5 people) this may be true.

I suggest candidates should look at [bcs.org](http://bcs.org) and the BCS Foundation Certificate in IS Project Management

That list contains the core business functions that I mark against for this type of question against.

**Question number: 7**

**Syllabus area: 2.1 Testing**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

This question asked about alternative types of testing to those of black and white box.

A significant number of answers simply did not read the question or did not know there are other types of testing.

This question needs a greater coverage within the answers and the different types of testing available.

It was poorly addressed, and the answers were particularly dated.

**Question number: 8**

**Syllabus area: 2.2 Rapid Application Development**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

Another question where it was clear the candidates had been prepared with a note dump on RAD. This question asked which tools and management techniques were used, not what RAD is.

A number of centres are defining RAD as simply being an agile method, it is not.

A majority of answers simply note dumped on the stages of traditional project, a spiral method or an agile methodology (which is not RAD). James Martins RAD is not a classed as any of these three methodologies.

Missing were references to CASE, JAD, JRP, Timeboxing, Parallel Development etc.

I know RAD itself is a dated methodology, but it is useful to see how RAD broken the project down into various strains and milestones to complete the tasks. And then how this evolves into newer versions of it.

**Question number: 9**

**Syllabus area: 3.4 Impact of cloud computing**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

I'm still getting a lot answers stating that cloud is an insure environment, with no evidence to back this up. Yes, there were hacks into Icloud etc. years ago, but most of the attacks where deem based on weak passwords. Any system will weak passwords will be insecure, cloud based or not.

Candidates need to be careful. A range of candidates gave answers along these line "On the positive side using cloud for small businesses is cheap, on the negative side its more expensive". Both cannot be true.

There were some very good answers to this question, showing an understanding of the cloud and how it maps to small businesses.

**Question number: 10**

**Syllabus area: 1.1 Characteristics of Data**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

A reasonable set of answers for structured data.

Semi structure data is not the opposite, that would be unstructured.

It was clear that candidates knew XML and JSON or did not know the pair.

XML may have the word language in the full version of the three-letter abbreviation, but it is not a programming language. It is a way of defining the structure of data using tags. Yes, HTML uses tag but not in the same context as XML. XML is a means of utilising tags to define structure.

XML can also be loaded into a relational database. A number of answers said it could not. XML can be loaded as a LOB or CLOB (character large object) and then queried using the XML extensions to SQL.

JSON was either full marks or zero, extremely binary answers.

**Question number: 11**

**Syllabus area: 1.3 Security**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

There were two issues with the access to the question

One, candidates confused data centres and machine rooms. A data centre is a purpose-built facility and a machine room is room where company servers are kept.

Two, understanding the difference between physical and logical security.

Lots of answers gave both physical and logical methods to enhance the security. For example, use of passwords to secure accounts is a logical method of ensuring security.

The answers require greater awareness of what a data centre is.

**Question number: 12**

**Syllabus area: 2.2 Prototypes**

**Total marks allocated: 12**

**Examiners' Guidance Notes**

Candidates would benefit from reading the question carefully.

The question asked candidates to not discuss cost or time, and yet these two factors appeared in numerous answers.

As if it were not off topic, I was getting answers that's it cheaper and more expensive. Again, both cannot be correct, without justification. But more importantly the question asked for those two factors (cost, time) to be ignored.

Some reasonable answers, but generally it appeared there was a lack of depth of knowledge in this area.

It seems some centres are focusing on the two factors this question asked to be rule out when answering.