BCS Higher Education Qualification

Profession Graduate Diploma[1]

May 2021

EXAMINERS' REPORT

Web Engineering

General comments[2]

Questions Report:

Qu.	Comment
A1	Over half of candidates attempted this question.
a)	Candidates generally answered this well, realising that attributes cannot be manipulated and that elements are much more flexible when specifying data.
b)	This scenario was designed to make use of as many properties of a DTD as possible, including the reuse of various elements, and did not need a long answer. Most candidates did not realise this and specified the DTD by directly following the description given in the question. Candidates lost marks by: - Repeating elements – each only needs to be defined once - Using elements when it would be more appropriate to use attributes, for example for hours and minutes in time - Failing to use appropriate symbols (?, |, * etc.) when needed - Not providing a complete DTD, including headers etc.
c)	This required a simple addition to the DTD, including an empty element to allow connection of the attributes. A significant number of candidates failed to include this.
A2	This was the joint mo0st popular question with around two thirds of candidates attempting it. Unfortunately only two thirds passed, generally because they failed to recognise the key characteristics of Web 2.0.
a)	Candidates generally understood the technologies that these acronyms stand for, but were less sure of their purpose, and tended to give code examples without explanation, rather than contextual examples of their use.
b)	Candidates mostly understood the type of application that each represented (IRC was described with less confidence, but it is a rather outdated technology) but many failed to explain the connection between all these technologies, which is that the content is wholly or mostly user generated, whereas with Web 1.0 the content is provided by the web author, with little or no opportunity for the end user to participate.
A3	This was the least popular question with under half of candidates answering it. The object of the question was to test the candidates understanding of data privacy and the

		legal requirements to obtain informed consent, and show some critical insight into the issues involved..
	a)	The key here is to understand that the purposes for which the data is being collected is fully explained and understood **before** consent is requested. Also, data subjects should be given the opportunity to withdraw their consent at any time, without consequences.
	b)	Dr Kogan did ask for informed consent as part of his initial study and did not break Facebook's rues at that time. Candidates were unsure whether using the data collected for political purposes was in breach of the original informed consent but collecting data from friend certainly was. They had not given any consent, informed otherwise, for their data to be used in this way. Candidates demonstrated some confusion over whether the initial consent covered the use of their Facebook friends data. It clearly did not.
	c)	This was a narrative question for candidates to consider whether the framework presented would be useful for those conducting social media research. There was no definitive right answer and candidates were marked on the quality of their justification.
B4		This was the joint most popular question. The object was for candidates to demonstrate some critical awareness of the issues involved, which many did successfully.
	a)	Candidates generally understood the reasons for using a XML database, and its general structure.
	b)	The object of this part was for candidates to show that they understood the architecture required to protect a database server. They mostly understood the need for a firewall and end-to-end encryption, but it was less clear where the ends of the encrypted link would be expected to be. What was less well understood was that the database server should not be connected directly or indirectly to the internet and that it should only accept connections from the nominated web server (this is controlled by the firewall)
	c)	Candidates were quite confident in describing what is meant by and giving examples of SQL injection attacks. They were clear about the dangers of allowing external users to form queries directly or indirectly. They were less confident about parameterised queries and very few understood the need to hard code the text of the query to prevent unauthorised access.
B5		Over half of candidates attempted this question, with just under two thirds passing. Candidates showed that they could prepare a straightforward set of web pages, but struggled with some of the more advanced features.
	a)	Candidates knew that CSS stands for Cascading Style Sheets and generally explained that they are used to provide a standard presentation for multi-page web sites. By collecting all the presentation information in one place which is accessible by all pages visual consistency is maintained and it is possible to make changes in one place and for them to be propagated immediately to all other pages
	b)	Almost all candidates developed acceptable versions of the basic home page with correct divisions and positioning of the pictures etc. The CSS was less well defined, with many candidates mixing content and presentation. The footnote definition was often

| | unclear, without active links to the social media sites. Defining the form for the last page gave some candidates difficulties. |