BCS Higher Education Qualification

Certificate in IT

October 2023

EXAMINERS' REPORT TEMPLATE

Information Systems

General comments

There was a marked difference between the marks and answers in Section A compared with Section B. More emphasis needs to be on issues such as project and system management, quality assurance and support; crucial areas within systems development.

In Section A, the highest pass rate between the four questions was 32%.

Section A questions are practical/application of knowledge type questions (i.e. draw a DFD for the following scenario) and require more detail. Section B comprises short answer questions requiring knowledge recall, defining and stating.

It is important that candidates read the question carefully, provide full answers, and allocate the time appropriate for the number of marks available. Centres need to provide support with exam techniques.

Questions Report:

	All markers of section A are required to add comments here:
A1	
	This was not a popular question with a pass mark of 42%. There was not enough description and discussion in the answers. Part (a) was answered to a reasonable level by most candidates who correctly described the three levels of management although few candidates could identify the information required by each. Better marks could have been achieved by providing more detailed descriptions around the frequency of data required for each management group, as well as more accurate definitions of the type of managers falling within each category. A diagram is also useful. Part (b) was generally not answered to a good standard because responses did not address the question which was related to project management techniques. Instead, most candidates described the phases of Waterfall project management and went into the details of approaches such as Agile and Kanban. It is clear that some candidates do not understand the difference between a project management method and a development method. Some candidates discussed very generic topics such as the use of procedures, processes and research. Good candidates described the use of valid techniques such as Gantt and PERT charts. There are several ways of supporting and managing projects with techniques such as

	scheduling, organising and monitoring tasks. Examples of these are expected. Some development methods also aid the management and provide good quality systems. In Part (c), the vast majority of candidates could not describe valid activities needed to maintain a system, with answers focusing on various types of testing, resulting in candidates being unable to attain any marks. Once a system has been developed and is in production, it needs to be maintained and monitored. Unseen errors may occur which obviously need to be corrected. New advances, technologies and requirements need to be considered.
A2	
	Although this was a popular question, it had a poor pass mark due to lack of detail and the lack of understanding of the QA approaches. Part (a) - There were some reasonable attempts at this section on testing but the use of the word LINK seemed to some candidates as if it were hyperlink/weblink testing. Most candidates did achieve marks for describing the use of unit, link and systems testing but additional marks could have been achieved if descriptions had been more precise (the various testing stages and differing testing methods which could be used at each stage). There was a lack of specific detail for what was being tested and the objective of each type of testing. Part (b) – Responses lacked precision and sufficient detail to achieve better marks. Many candidates explained vaguely what UAT involves but then did not go on to explain why it is important, and so missed out on additional marks. Overall, candidates could have achieved more marks by explaining who carries out UAT and for what purpose, as well as why it is important. UAT is essential but can be at any stage depending on the development method used. Various levels of users should be involved in order to get differing responses with regard to requirements, functionality and performance for example. Part (c) – This question was very weakly answered, a significant number repeated testing as an element in this part. Candidates struggled to understand the meaning of QA approaches in coding and systems design and conflated this with a wide range of topics that were not valid, such as white box and black box testing and behaviour-driven development. As such, they achieved few marks. Quality in a systems development project is the assessment of the satisfaction of adhering to the system requirements. Various approaches can provide this including QA sessions, testing, feedback and the choice of development methodology etc.

A3	
	The most popular question, again with a poor pass rate due to the lack of detail. There was a distinct lack of understanding between functional and non-functional requirements. Few knew what logical and physical designs were. Part (a) - The two prototyping methods need to be described including why each should be used. Candidates did not focus on the need to "explain" differences between throwaway and evolutionary prototypes. Diagrams are useful but avoid answering in note format only. The inclusion of time and cost are not relevant as they are used for differing purposes. Areas not covered in prototyping should be mentioned. Most answers discussed the pros/cons of each at a high level and duplicated the same information multiple times. Part (b) - Both functional and non-functional aspects of system development are important. Functional provides the requirements for the business and examples were expected. Non-functional deals with examples of operational considerations. Answers showed that many candidates were unclear on the differences between functional and non-functional requirements. Responses generally went into defining functional and non-functional requirements in a very vague way and examples provided were not valid or imprecise, so high marks could not be awarded. Part (c) – This question was poorly attempted, with no real evidence of understanding of how a designed system is ported into an actual software artefact. Logical designs are conceptual designs behind the requirement, used for understanding between the users and developers. Physical designs are the tangible aspects of the system which provide the solutions. Examples were expected. Responses demonstrated a clear lack of knowledge relating to logical and physical designs which meant that descriptions of the differences were incorrect, resulting in low marks. There was also a lack of understanding of the question. Many responses focused on describing data models and their features, such as entities and relationships.
A4	
	There were reasonable answers to this question although there was still a misunderstanding of the term 'implementation'. Few were able to describe differing training approaches. Part (a) - The implementation of the system occurs at the end of the development. There are several ways the system is released for use. These should be described and indications of where and when they should be used. Diagrams also help. There were some good answers that demonstrated an understanding of the question which was related to system implementation approaches. However, there were a substantial number of candidates who described methodologies such as Waterfall and delivery approaches such as Agile. Some responses described how there could be different types of systems selected such as commercial-off-the-shelf. These answers could not achieve any marks as they did not address the question. Part (b) was not answered well with candidates generally unable to identify valid training approaches to then go on and describe them. There was also a large focus on how training would be planned and organised, which did not address the question. This resulted in few marks being awarded.

	All levels of users need to be trained. This could happen during or after development depending on the methodology chosen. Examples of three differing approaches is expected. Part (c) - Once the system has been developed and implemented, constant review, maintenance and monitoring is required. Business functions, staffing, technology changes over time. Candidates were generally able to achieve marks, but responses demonstrated a lack of depth in knowledge. Candidates did not provide detailed or nuanced descriptions of post-implementation reviews and the reasons for their importance. Had they done so, then higher marks would have been achieved.
B5	
	A very popular question with a high pass rate. Candidates were able to describe what a cloud database is, its advantages and disadvantages. Part (a) should provide definitions and discuss examples of cloud-based technology. The better answers were wider ranging and explained various features of cloud computing, public and private clouds and models of service. Good answers for parts (b) and (c) were supported with various examples and went beyond a bulleted list of points. A small minority of responses were limited to one or two advantages and disadvantages. In part (b), an explanation of why the use of cloud databases assists businesses is expected.
B6	
	A very popular question with a high pass rate. Part (a) was on the whole answered well with candidates providing textbook answers to the definitions for information and data. A very small number of candidates did not provide clear definitions of each term. Candidates lost marks where they did not provide any examples for information and data. The better responses provided clear, reasonable examples for each (rather than trivial ones). For part (b), there was an error with this part of the question. The paper asked for the 'medium' where it should have said 'median' markers and moderators where made aware of the issue ahead of marking and no candidates were disadvantaged but this. The description of the term 'median' and how it is calculated with both odd and even lists and practical examples is expected. Most candidates were able to provide textbook answers for median, with some recognising the typo in the paper and restating it as median before going on to provide an example. Some candidates sorted numbers into order before identifying the median. The mean was also explained well with the use of an example. A small minority of candidates provided an incorrect example and so lost marks. For part (c), a description of the mean of a list of random numbers and its calculation together with an example is expected.
B7	
	This question on the whole was not answered as well as it could have been, with some candidates providing very brief explanations that did not correctly explain operational, tactical and strategic data. A very small number of candidates confused the definitions of the categories and provided incorrect examples which demonstrated they had not understood the terms. Some candidates were able to correctly define each category but the best candidates also explained the users of

	each type of data, their level in the organisational hierarchy, and the time period the data covered as well as providing examples.
B8	This question was answered poorly by many candidates. Most candidates were able to identify three types of media but the range of guidelines identified were limited in range. The responses lacked depth in their scope and there was some duplication of guidelines across the types of multimedia chosen. Some candidates provided a range of examples for guidelines. More detail for the guidelines would have gained higher marks.
B9	
	Most candidates provided poor answers to this question. The majority of responses made reference to throwaway or evolutionary prototyping. A small number of responses looked at more than one prototype technique and a few candidates lost marks by making reference to cost and time. A very small number of candidates explained the prototype technique they had selected before listing the advantages and disadvantages. Many of the responses were basic and in bullet list form. The number of advantages and disadvantages identified were limited in range and candidates also lost marks here. Some answers were extremely basic and limited to a couple of sentences. Most responses made no reference to developing security, performance, and integration. Some answers referenced user participation and documentation.
B10	
	On the whole, this question was not answered well with responses being basic and lacking in detail on reference to specific solutions that would aid a blind person in using a web page but many responses were general. Most candidates were able to provide at least two solutions such as a textual description of the site or images with alt tags but many candidates did not discuss further how these would aid a visually impaired user or provide examples. One candidate was able to differentiate between levels of visual impairment and provide examples of solutions for each. A few candidates mentioned the need for training developers on legislation. A small number of candidates made reference to hardware solutions indicating that they had not read the question fully.
B11	
	This question was on the whole answered well. For part (a) most candidates were able to correctly define legacy system, with some candidates achieving higher marks for providing more detail and mentioning maintenance issues for legacy systems. In part (b), most candidates were able to describe what a software bug is. Better answers explained how they occur and the impacts. For part (c), a small number of candidates were not able to explain version control fully or at all but most answered well with the better responses providing examples of versioned software and its purpose. Part (d) was well answered with the vast majority of candidates identifying the need for a fix and security/vulnerability issues.
B12	
	This question was on the whole not answered well. Many candidates provided a bullet point list of roles, without any explanation of their relevance and responsibilities. Some candidates provided a good range of typical project roles and explained the responsibilities for each type of role. Several roles are acceptable but should include project management, software and hardware support. Higher marks could be achieved by providing an example of a project before going on to explain relevant roles for the outlined piece of work. A small number of candidates provided a list of types of personality as opposed to role, indicating that they had not

	understood the question. Overall, the answers indicated that many candidates did not understand the types of roles needed to deliver a project.