General comments

The overall results were disappointing with most candidates who passed achieving just above a pass mark. This was due to the lack of attempts of question one and the inability to gain marks from question four despite it being the second most popular question.

The cloud questions are still being answered poorly and are focused on the a news story from a number of years ago. Candidates need to focus on business solutions and not what is reported in newspapers.

Questions Report:

A1	
	A few candidates attempted this question. Of the few who attempted, most included a dataflow diagram. Centres need to be encouraged to include OO techniques as an alternative to structured methods and tools. A Use Case diagram can be quite simple in a similar manner to a dataflow diagram.
	The inclusion of 'include' and 'extend' within the diagram together with an explanation would increase the marks. An example was implied in the scenario. Diagrams help to illustrate the requirements of a system between developer and user.
	Some attempted to draw ERDs or flow charts. Where a candidate knew about OO it was well answered, however most candidates demonstrated a lack of OO/ Use Case knowledge even though this is in Section 2.3b of the Syllabus states 'OO Modelling'.
A2	
	This was the most popular question with a pass mark of 75% and was well answered. Although five steps were required it was acceptable to combine steps. The expectation of the question was to ensure that candidates understand the whole life cycle from planning to implementation and maintenance. It is important to stress that there must be detailed analysis and design does not just the inclusion of the user interface. Also it should be noted that testing occurs during all stages of the life cycle.
	There are many different characteristics of information from accuracy, reliability to relevance and completeness. Examples of each taken from any business environment were acceptable though some were not applicable to an information system. One of the clearly taught characteristics of good information is that it has to be read/presented/understood by a human, which is not always the case.
	Section C about factors influencing changes to project development was again well answered, but some answers were short, more context and meaning were required in these instances.

A3	
	A reasonably popular question based on project management techniques with a pass mark of 58%. Most candidates could identify the responsibilities of a project manager but only a small number of candidates understood the Eternal Triangle. More emphasis needs to be made to include these techniques.
	Risk analysis is part of a feasibility study at the beginning of the planning stages and includes for example, the typical TELOS and SWOT analysis. Examples were expected. There is a subtle difference in the measurement of quality assurance, planning and control based on standards, procedures and requirements of the system and the project itself.
	Candidates should answer with the responsibilities and not the traits of a project manager. Risk analysis needed further elaboration and detailed examples.
	Section D answers needed to be of a higher level, for example the idea of standards, adhering to standards and displaying that standards have been obtained should be clearly explained.
A4	
	The second most popular question but with a pass mark of 22%. Candidates appeared to find it difficult to relate to misuse of data, information and the advances of technology within a health system. Many misunderstood the question and concentrated on the effect of using screens on a person's health, although some aspects do have relevance. It is not only the data that can be affected but also the current trend and use of AI in assisting with solving health issues. Descriptions and examples were expected.
	The disadvantages of cloud computing include accessibility, functionality, security and control amongst other aspects. Three issues need to be identified and described. Only short descriptions were given with very little detail. In both cases of part a) and b), candidates need to appreciate the number of marks available and the amount of detail required.
	There were answers that focused on medical misuse instead of technology. There are answers that focus on non-business cloud environments and media stories. Cost, downtime and hacking were the most quoted disadvantages. Students may want to visit AWS, Azure, Google cloud etc for the stats on these areas.
B5	
	There needed to be clear descriptions of raw and processed data, knowledge and wisdom. More detailed and precise definitions of the terms along with examples in the context of information systems, would have enabled candidates to score more marks. This question was answered well with most candidates being able to provide a description of data, information and knowledge. Good answers provided examples for all four data related terms while weaker answers provided only the descriptions. Only a few candidates provided a rounded description of wisdom, with some not providing an explanation or an example. A few skipped the description of wisdom. None of the candidates related their explanation of wisdom to Information Systems.

B6	
	The first part of this question asked for a list and description of common elements across both data flow and context diagrams. Many candidates mis-read this question and provided one list of four elements on a context diagram, and a separate list of four elements on a data flow diagram. Where common elements were correctly identified, candidates did not provide adequate descriptions and so were unable to achieve high marks. Some candidates listed elements correctly, along with supporting diagrams, but then went on to state that those elements were not common across both diagrams and so could not achieve marks for their answers. The second part of the question was poorly answered with candidates not addressing the rules that would validate whether both diagrams are balanced and consistent with each other. Many answers focussed on providing general definitions of context and data flow diagrams. Most candidates scored some marks on this question. The good answers accurately listed all the elements as well as providing more detailed descriptions of each. The weaker answers provided a bullet point list of some of the elements but answers lacked an accurate description to score all the marks. Some candidates provided incorrect or partial names for the elements. A few candidates sketched a diagram to support their illustration of the elements with a small number of these providing accompanying descriptions. The second part of the question was poorly answered, with most candidates seeming to know the elements of a data flow diagram but were but unable to identify the validation rules. Most who attempted this part of the question provided a general response that the diagrams needed to be balanced and consistent, without providing any further detail. They were unable to state the differences between a data flow diagram and context diagram. Some answers stated that the data flow diagram is more detailed but stopped short of identifying any specific differences. A few candidates answered correctly that the number of external entities and processes are the same on both diagrams.
B7	
	Candidates could have achieved better marks by mentioning specific multi-media types, providing examples, and then explaining the applicable guidelines in the context of a website. Many answers were repetitive and identical, focussing solely on accessibility or general navigation of a website without reference to multi-media categories. A substantial number of candidates did not answer this question in full or make reference to types of media in their response, with many candidates providing instead general advice for building a website. The more able candidates were able to include in their responses different types of media and justify their choices, providing advantages and disadvantages. Those candidates who did not mention many forms of media still gained some marks by explaining that the website needed to adhere to standards around visual impairment and identified ways in which this could be achieved through various reasonable adjustments. Most candidates did not provide answers that were directly related to the multimedia guidance. Instead, their responses were general guidance when developing a website, or they only mentioned images, videos, and other multimedia elements without providing a precise discussion or explanation.

B8	
	This question received responses ranging from poor to average. Where testing techniques were correctly identified, candidates could have scored more marks by providing specific details on the purpose of each technique and how it is implemented in practice. A lot of candidates identified testing techniques using incorrect names and therefore could not score marks. Some candidates repeated techniques more than once and with the use of names that were invalid. Many candidates listed at least three different techniques for testing the functionality of a computer application. The good answers identified three or more forms of testing and provided accurate descriptions of each. Candidates who simply listed types of testing without providing a description achieved lower marks. Some candidates provided brief descriptions of types of testing and missed the opportunity to gain the extra marks. A few candidates provided incorrect descriptions for the type of testing they had listed out. One candidate misinterpreted the question, relating their responses to surveys, interviews and observation with no mention of testing. Few candidates correctly answered the question by providing the right explanation and discussion of the testing techniques, such as black box, white box, and stress testing. However, most candidates listed different types of testing that were not directly related to the expected answer.
B9	
	A substantial number of candidates provided short answers with a narrow emphasis on planning or prototyping aspects, making it difficult for them to pick up many marks. Candidates need to show a more comprehensive understanding of RAD, for example the structure, tooling, and prototyping aspects, as well as some of the advantages and disadvantages. Many candidates provided answers which were too brief answers and described only some of the elements of a Rapid Application Development approach. The more able candidates provided lengthier answers explaining the involvement of users, prototyping, joint development, planning, sprint and review cycles, and rapid development. Very few candidates mentioned CASE and parallel mini-projects. Those who did not mention these gained marks on the description of prototyping, iteration and user feedback. The answers given needed to be more comprehensive.

B10	
	Most candidates were able to identify methods for a secure log-in process, however, there was a lot of repetition which meant that additional marks could not be awarded. For example, many candidates separated fingerprint and iris recognition into two categories, but both fall under biometrics.

Almost all candidates outlined the steps for only one password reset process, in particular, registered email validation. Candidates could have scored more marks by listing other password reset processes.

With regard to why a user should not simply be deleted after leaving an organisation, many candidates identified that an audit trail was required, and that access may be required to documentation stored in user directories. The ability to achieve higher marks on this question was limited by the fact that candidates did not outline a wider range of reasons.
Part a) was answered well by most candidates with the stronger answers identifying more methods alongside a description and justification of each. Some candidates described one or two methods with more than one example of each and lost the opportunity for more marks. Few responses went beyond the mentioning of biometrics, and two factor authentication to also identify IP filtering or time filtering. Some candidates misinterpreted the question and described the processes for a password reset.

Many answers were limited to the use of validation via registered email address without discussing checks against previous passwords and IP filtering.

Part c) answers could be improved with many candidates providing only a single reason, the deletion of documentation, therefore missing out on further marks from a more rounded response. |
| **B11** | |
| | Answers to this question varied with candidates able to identify three different charts and a brief rationale for each choice, and others who repeated the choice of graph, resulting in limited marks being achieved. Candidates could have scored higher marks by providing a more detailed justification for their choices.
Some responses failed to justify their selection of the type of chart. The stronger answers provided more detail on the advantages and disadvantages of the type of chart used. |
| **B12** | |
| | Candidates struggled to explain how each component in an Entity Relationship Model is converted into a physical version in a relational database. The majority of candidates did not address the question, instead focussing on describing the components of an ERM, such as entities and attributes, rather than identifying how these are represented in a relational database. A few candidates showed understanding of the conversion process but could not achieve high marks due to a lack of sufficient detail in their answers.
Some candidates attempted to answer the question by sketching an entity relationship diagram and scored some marks for their explanations alongside the illustrations. Other candidates provided a diagram but lost marks for not accompanying this with a description. Very few answers mentioned relationships or fully discussed attributes. |