

ITGS

Overall grade boundaries

Higher level

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 10	11 - 22	23 - 35	36 - 47	48 - 58	59 - 69	70 - 100

Standard level

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 10	11 - 22	23 - 34	35 - 46	47 - 57	58 - 69	70 - 100

General comments

ITGS is a comprehensive course that tests the candidate's abilities in a range of disciplines.

Within each component there is a requirement for the candidate to demonstrate a different set of skills, all of which must be underpinned by the ability to effectively use a range of IT applications. This can be illustrated in the table below:

Component	Skills	Assessment Objective(s) in Guide (first teaching 2010)
Portfolio (HL)	Research skills to discuss the effect of IT on contemporary society and to determine when an article is sufficiently focussed on an IT system. Ability to work with others to formulate strategies.	AO1, AO2 and AO3
Project (SL)	Demonstration of practical skills, ability to work with a client and explain the effects of the product	AO1, AO2 and AO4
Paper 1 (HL and SL)	Knowledge and understanding to be able to describe technical IT systems and explain their effects	AO1 and AO2
Paper 2 (HL and SL)	Knowledge and understanding to be able to describe technical IT systems and discuss their effects	AO1, AO2 and AO3
Paper 3 (HL)	Knowledge of IT systems to explain how they function, demonstrate independent research skills, ability to synthesise information and draw meaningful conclusions	AO1, AO2 (social/ethical issues), AO2 (technical knowledge) and AO3

Higher level internal assessment – portfolio and extension

Component grade boundaries

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 4	5 - 9	10 - 15	16 - 21	22 - 27	28 - 33	34 - 45

The range and suitability of the work submitted

A wide range of work was submitted for moderation. Most followed the regulations for presenting the Portfolios and the Portfolio extension, and were based on news items about current, relevant topics from three different areas of impact.

A number of issues within the Portfolio were identified in this session:

- There were fewer cases with non-ITGS essays. However, some of the topics chosen were problematic due to the fact that they were about technologies that are still developing, or about the technology itself without presenting a clear IT issue. In some cases there were not enough sources to provide an effective Portfolio.
- Some candidates still do not follow the new criteria B and D which suggests that teachers are not keeping up to date with changes that were published in 2008. Please note this information is on the OCC.
- There was a lack of technical knowledge displayed in Criterion B. The Portfolio requires an analysis (understanding of the functioning of the IT system and the interrelationship between the key parts) of the IT systems as well as a discussion of the ethical and social issues.
- There was a lack of good analyses and evaluations in the Portfolio. The analyses and evaluations are opportunities for candidates to display their higher order thinking skills which are required to access the higher level descriptors in each criterion. Unsupported statements are not sufficient.

For the extension more candidates are taking the opportunity to use a 100 word introduction, which is not counted in the word limit, to state the issue and justify the choice of interviewee(s). The quality of the interviewees and the range and depth of the questions are also improving.

However, there is still a significant problem with the lack of detailed references to the Portfolio in Criteria O and P.

Those teachers who gave detailed comments to justify their marks assisted the moderation process and enabled the moderator to give more constructive feedback to the teacher.

Pieces should be submitted in date order as the final mark should reflect the candidate's level of achievement by the end of the course. It is important to check addition of marks and carefully transcribe the marks so there is no discrepancy between the 3/IA and 3C/S.

Candidate performance against each criterion

Criterion A – Presentation of the issue

Candidates often spend too much of this criterion explaining/ describing the positives impacts or the use of the IT system itself in the first part of Criterion A and only in the last paragraph outline the issue. They need to explain why there is an issue - this requires specific reference to the main negative impacts of the situation in the news item on the stakeholder/s and a clear explanation of the link to the use of the specific IT system in the news item.

Criterion B – The IT background of the issue

This criterion needs a full description of the major components of the IT used in the news item and an explanation of how it worked. There must also be an analysis of the IT to show how its use contributed to the issue. Often Criterion B was very generic and did not use correct IT terminology.

Criterion C – The impact of the issue

Generally the investigation of the issue in the news item and its effects were not detailed enough and as a consequence little analysis and evaluation were attempted. Teachers need to specifically teach the skills required for analysis and evaluation. Some did not reach the higher marks due to lack of cited research. There is a maximum of three marks if arguments are not backed up with cited references.

Criterion D – Solutions to problems arising from the issue

The problem must be clear at the outset having been identified in Criterion C. Some schools seemed to be working from a previous version of the Guide and were not aware that there is no longer a need to give more than one solution. Several candidates included up to three solutions to problems. When so many solutions were offered they were invariably only stated or outlined and the extra solutions gained no marks. The updated criteria should be downloaded from the ITGS Subject page on the OCC.

Criterion E – Selection and use of sources

Generally there was better use of formal bibliographies and citations. URLs alone are not accepted and there is a requirement of a minimum of 4 references. Well researched pieces included 8-10 references.

Criterion F – Expression of ideas relevant to the social issue

Candidates who scored full marks:

- Wrote coherently
- Clearly showed a flow of ideas from Criterion A to Criterion D
- Provided relevant examples and cited their sources
- Showed evidence of wide, well cited research

Extension**Criterion N**

In some cases it was descriptive with too little analysis of the interview(s). When there is more than one interview it is easier to complete an effective and extensive analysis

Criterion O

In this criterion there has to be a reflection on the interview with respect to the Portfolio research. Comments from the interview must be compared with the finding of the research in the Portfolio. In some cases this criterion included a discussion of the interview/s without mention to the Portfolio.

Criterion P

This criterion was in general not well addressed. The candidate should give his/her own opinion about the future implications. All these implications must be supported with evidence from the research and the interviews.

Criterion Q

The choice of interviewee was in general appropriate. In some cases the questions were not open ended giving responses that not helped to the analysis and discussion of the issue. The header was in some cases inexistent and in others was not complete.

Recommendations for the teaching of future candidates

- Give candidates time to undertake extensive research
- Approve the news item to avoid non-ITGS topics (use a Portfolio proposal form and discuss it on the OCC)
- Check that each piece addresses a different area of impact
- Discourage the use of quotations unless they add weight to the argument.
- Advise candidates of the word count and penalise candidates for excess words
- Teach candidates how to formally cite references and prepare bibliographies
- Check how to determine the final mark.
- Visit the special OCC ITGS forum where there has been a discussion of a sample Portfolio and how it should be marked

Standard level internal assessment - Project

Component grade boundaries

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 4	5 - 8	9 - 12	13 - 17	18 - 21	22 - 26	27 - 35

The range and suitability of the work submitted

The majority of the candidates properly described a problem set in a social context. Most of the projects were focused on the needs of clients with clear evidence that the client was involved in the testing of the product. In some project reports, however, no clients were identified.

The products were usually too simplistic and did not reflect the complexity indicated in the "Guidance on the appropriateness and complexity of an IT solution for the project" document (download from ITGS homepage on the OCC). The majority of the products developed were, as usual, web sites, mostly created with Macromedia Dreamweaver, but there were many created with the use of web page editors, carrying no complexity.

Due to presenting only one solution or presenting non IT solutions for the alternative approach, a zero for Criterion H was awarded to approximately 20 % of the reports; for conducting only informal testing of the product (or for not conducting any test at all), about 40 % of the candidates received a zero under Criterion J. This is an area of concern as the need of IT solutions and alternative approaches in Criterion H and the need of formal testing in Criterion J has been emphasized and re-emphasized in every session and in every school feedback report.

Candidate performance against each criterion

Criterion G

A wide range of clients and problems were addressed. In most cases, there was evidence that the client was consulted regarding both the problem and the requirements of the solution.

Criterion H

This criterion is still not addressed well. In a few instances the solution was not clearly an IT solution or an alternative solution was not even presented. The comparison of the advantages and disadvantages are often implicit and not explicitly stated or generic in nature, not referring to a specific solution. Often how the solution solves the problem in Criterion G is not provided.

Criterion I

The schedule often lacks the required detail. The sketches and diagrams from the design must be included in Criterion I. The hardware is in most cases described, but often reference to servers that must host the product are not mentioned. Also backup systems are often forgotten. How the complex aspects of the product were created and the description of how the software was used can be best presented using screenshots. It remains a mystery why many candidates do not include the sources for all of the content contained in their products.

Criterion J

Most candidates followed the test-refine process and included screenshots as evidence. The screenshots should be marked to clearly show where the refinements were made. A significant number of candidates did not provide evidence of formal testing, though, and here is where major differences were found between the marks awarded by the teacher and those awarded by the moderator, because many teachers have marked this criterion as normal, even with the lack of completed questionnaires in the project report appendix.

Criterion K

In order to address this criterion, candidates should consult with their client and discuss the observable impacts and the projected impacts.

Criterion L

The products are in general not reaching the expectation for complexity and design expected for the ITGS product. Many products remain in the range of 4 marks resulting from functional (2), design (1) and complexity (1). The products must strive to use more complex features and better design. By functionality, it is meant that the product not only works technically well, but also that it fulfills the needs established under Criterion G.

Criterion M

In general, most logbooks are not well maintained.

Recommendations for the teaching of future candidates

- In their feedback reports, all the schools have been advised to consider for future ITGS projects:
 - the current ITGS guide
 - the document "Guidance on the appropriateness and complexity of an IT solution for the project"
 - past ITGS subject reports, especially May08, May09 and May10
 - threads regarding the project on the OCC Discussion Forum and "ITGS SL: Project forum"
 - the sample ITGS project posted in the "ITGS special event - SL Project" forum on the OCC
 - the new ITGS project assessment criteria for H and J for May09 onwards posted on the OCC
 - participation in an ITGS workshop to review all requirements of the ITGS project and view sample components.
- The candidates should examine the six example projects that have been included in the new Teacher Support Material on the OCC in order to understand the complexity that is expected in the product.

- If the teachers of low achieving schools at least read and apply the advice posted on their feedback reports that would certainly help their candidates achieve significantly higher marks.
- The project needs to be developed over a significant period of time in order to address the requirements for each of the criteria and to follow a process for developing the product.
- The candidates need to be familiar with the expectations of assessment criteria.
- The ITGS teacher needs to regularly monitor the progress of the candidates' projects criterion-by-criterion.

Higher and standard level paper one

Component grade boundaries

Higher and standard level

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 4	5 - 9	10 - 14	15 - 18	19 - 21	22 - 25	26 - 40

The areas of the programme and examination that appeared difficult for the candidates

As usual, many candidates were lacking in technical knowledge or only had a superficial grasp of it. The social aspects of the paper were often dealt with in a common sense way with little evidence of real knowledge.

The levels of knowledge, understanding and skill demonstrated

Generally these were at a common sense / general knowledge level, with little evidence of detailed study, although there were some gratifying exceptions to this.

The strengths and weaknesses of the candidates in the treatment of individual questions

Question 1

- Generally well answered although many candidates missed the point that multitasking is the simultaneous running of programs or processes.
- Many vague answers that did not relate to the increasing size of the Windows software.
- Quite well answered, with the better candidates mentioning that paid for software often comes with support.

Question 2

- a) The better candidates knew that a Trojan Horse is malware disguised as something else. Too many thought it was a virus.
- b) Many answers were vague, lacking in technical detail about how logged data can be transmitted.
- c) Most candidates suggested the use of keylogging as a means of surveillance. Some suggested that it is a way of detecting passwords, which in any networked situation would be unnecessary and unrealistic because a network manager can bypass these as necessary.

Question 3

- a) Most got this right. The few mistakes were generally due to carelessness rather than lack of understanding.
- b) The better candidates suggested a unique reference number and a very few knew about compound keys. Many suggested email address or telephone number which are unrealistic in practical use.
- c) Most candidates said something about passwords. Fewer dealt with the integrity of the data or mentioned validation. Understanding of record locking was mostly not there.

Question 4

- a) Many candidates knew that a model is a reflection of reality but fewer realised that it is a mathematical representation.
- b) Most got the idea of taking a sequence of stills but few thought about setting variables in order to achieve precisely the effects desired.
- c) Many candidates realised that the data had to be reliable as well as the rules of the model. Too many commented on the quality of the images rather than the accuracy of the model.

Recommendations and guidance for the teaching of future candidates

Above all, the candidates must realise that this is a technical subject with a body of technical knowledge. Approaching it as a common sense social commentary will never yield many marks.

The most important advice is that the candidates must be taught plenty of explicit IT knowledge as itemised on the syllabus. It cannot be skated over and it is far more likely to generate credit than general social comments that anyone could come up with who had never studied the subject. The candidates must have practical experience of creating and using data handling solutions. A typical and important example is the setting up and interrogation of a relational database of at least two tables. Another is the setting up of a non trivial spreadsheet which uses a variety of formulae and functions. Questions on databases and spreadsheets will be asked on a regular basis.

Question answering has to be focussed and detailed. Candidates need to look closely at the wording of a question in order to answer what is required rather than what they hope is required. This sort of precision is the same quality that should be practised in the study of the material. Answers must contain technical knowledge. Part (c) questions do not always explicitly ask for that but candidates should use their technical knowledge to illustrate their answers to the scenario.

Higher level and standard level paper two

Component grade boundaries

Higher level

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 6	7 - 13	14 - 20	21 - 27	28 - 34	35 - 41	42 - 60

The areas of the programme and examination that appeared difficult for the candidates

- Many answers lacked correct use of ITGS terminology. For example in HL P2 Q1c) candidates described keyboards with raised dots, rather than Braille keyboards and in HL P2 Q2b) candidates used words like 'put' and 'flip'. In SL Q2a) there was an unawareness of the types of software licenses.

Recommendations for candidates

- Compile a glossary of terms which includes a descriptive paragraph
- Understand the terminology relating to social and ethical impacts
- When using software to perform a task (eg editing graphics, querying a database), learn to use the correct terminology related to that task
- Candidates often did not read the question carefully and therefore included irrelevant stakeholders and inappropriate impacts in their extended responses. For example in HL Q1d) many answers addressed the cost of the Kindle and impacts on the environment or teachers. In HL Q4d)/ SL Q1d) the question specifically requires a response that focuses on the customer's needs.

Recommendations for candidates

- Highlight key words in the question
- Plan an extended response by listing the stakeholders and identifying the issues

- Balanced answers with opinions and conclusions were rare. Many candidates attempted a conclusion, but this was often simply a summary or an opportunity to introduce new facts. Rarely did conclusions provide an opinion based on an evaluation of the preceding arguments. By the end of the extended response many candidates had not provided a definitive answer to the question.

Recommendations for candidates

- Use the markband for extended responses as guidance when writing your answers
 - Practise writing conclusions to extended response questions
- Poor handwriting was particularly evident this year. Often key words were illegible and this made marking difficult.

Recommendations for candidates

- Take the time to write as clearly as possible
- Use new paragraphs for separate points, leave line spaces between parts of questions and start each new question on a separate page

The questions which required more specific ITGS knowledge (eg HL Q2b, HL Q2c, HL Q3b/SL Q5b, HL Q3c/SL Q3c, and HL Q4c/SL Q1c) generally showed a limited understanding of the course.

The strengths and weaknesses of the candidates in the treatment of individual questions

HL Question 3 / SL Question 5 - Science and environment

- a) Some candidates found this straightforward but others confused input and output devices or identified software instead of hardware
- b) Most candidates identified one or two steps, but few identified four steps
- c) Most answers were derived from commonsense and lacked reasoning relating to the underlying technology (eg the fact that Jules has to match words in an internal language database)
- d) Candidates were able to describe the advantages and disadvantages of a Tennis-Umpire, but evaluation was generally lacking

HL Question 4 / SL Question 1 - Business and employment

- a) Most candidates could identify at least one characteristic of a P2P network
- b) Candidates had knowledge of viruses and preventative measures, but answers were not always fully described
- c) This question was poorly answered. Candidates showed little understanding of the technology and many suggestions did not qualify as proof

- d) All arguments in extended responses should be supported by examples and this question specifically asked for examples. The better answers provided detailed examples of a range of services including online purchasing, subscription based businesses and free downloads from the artists

HL questions

The strengths and weaknesses of the candidates in the treatment of individual questions

Question 1 - Education / Health

- a) This part was answered well and many new answers were added to the markscheme
- b) There was a good understanding of online shopping. Sometimes the key processes were not described eg the answer 'the book is downloaded' simple repeats the question
- c) Answers often lacked technical knowledge (eg a keyboard with raised dots, instead of a Braille keyboard or a suggestion of speakers to allow voice input)
- d) Whilst there were some good answers many candidates did not read the question carefully. Issues relating to cost, environment or impacts on teachers were not relevant. The question required candidates to consider the advantages and disadvantages of the e-books replacing textbooks, but often this comparison was missing

Question 2 - Politics and government / Arts, entertainment and leisure

- a) Candidates were familiar with file formats
- b) There was a very poor understanding of graphic techniques. Candidates had either little experience of graphics software or could not apply the ITGS terminology to their practical classroom exercises
- c) This question required an understanding of image files and the concerns relating to the use of the same image in print and on a web page. Many candidates lost marks as they wrote about copyright issues or lack of originality if material is duplicated
- d) The better answers analysed the differences between amateur and professional photographers with consideration of the professional code of ethics

SL Questions

The strengths and weaknesses of the candidates in the treatment of individual questions

Question 2 - Education

- a) Many responses indicated an unawareness of the names for the various types of software licenses.
- b) The focus is on the words "software considerations" and "developing" *Project X* animated books. Some candidates strayed off-course.
- c) Candidates who are familiar with the IT concept of data compression were able to explain two disadvantages of using data compression and apply it to the scenario of interactive multimedia production.

- d) Many candidates were able to provide a balance of arguments for and against the use of Project X technology instead of sets of printed reading books. However, the use of IT terminology and concepts and the final evaluation was often missing. Without this, the candidate cannot reach the upper markbands.

Question 3 - Health

- a) Most candidates were able to identify at least one characteristic of ASCII.
- b) Candidates could describe major steps by which *Google Flu Trends* could associate flu-related keywords entered by users within the United States to the occurrence of flu in the various regions. There was evidence of IT terminology and concepts in the responses.
- c) The concept of using quotation marks in the search window around text is fundamental to using a search engine. It was surprising how many candidates did not achieve full marks on this question. Hands-on experience in using various search techniques is important for understanding search results.
- d) It needs to be pointed out that part (d) requires candidates to present a balance of arguments and then determine the logical conclusion based on the evidence that they have presented. The question "To what extent should analysis tools such as Google Flu Trends be used as the main providers of information for governments and health organizations in planning resources to manage illnesses?" is a typical question where either side of the argument could be the outcome based on the evidence presented. Few candidates were able to present their viewpoints well.

Question 4 - Arts, entertainment and leisure

- a) The focus of the question was to identify two hardware requirements that would be required to watch 3D videos the webcam. It was amazing the number of candidates who responded with "microphone" implying that they had not carefully read the phrase "required to watch 3D videos".
- b) The lack of IT knowledge was evidence in the difficulty candidates experienced in defining *videoconferencing* and in describing one technical limitation in using real-time conferencing.
- c) Most candidates could identify two IT-based solutions for learning how to upload pre-recorded videos to an online video hosting site. Fewer could explain how it would work.
- d) Similar to question SL Q3d) candidates are expected to present a balanced argument for the question "To what extent do you agree with the statement that 'the development of interactive online learning environments will never satisfactorily replace face-to-face contact'?" This requires both sides of the argument being presented with evidence and specific examples. Responses need to be organized before beginning to write.

Question 6 - Politics and Government

- a) Almost all candidates could identify two IT-based methods for sending text messages simultaneously to a number of people.
- b) Candidates either understood how *cookies* worked or not and could apply that knowledge to the *Twitter* scenario.

- c) Candidates did not understand the differences in the technology involved in locating a cell (mobile) phone and locating a GPS system.
- d) Most candidates provided circumstances where it would be acceptable for government authorities to require organizations, such as *Twitter*, to provide them with information regarding individuals and data that had been collected from individuals' online activities. The main problem was the lack of balance in the terminology and concepts for IT systems and terminology used to describe social/ethical considerations. Most candidates clearly referred to privacy issues, but did not refer to what kinds of information would be collected or how it was collected. Some candidates appropriately referred to the online policy agreements that individuals must agree to before creating a *Twitter* account.

Recommendations and guidance for the teaching of future candidates

- Teach candidates how to write extended responses
- Provide opportunities throughout the course for candidates to write responses to questions that use the command terms
- Test candidates using past exam papers and provide feedback on extended responses using the markband
- Teach the terminology and ask candidates to compile a glossary of terms
- Identify systems in the Guide where candidates can describe step-by-step processes
- Encourage wide research. This will provide examples for extended responses
- Include practical activities to give candidates firsthand experience of IT tools
- Visit the OCC where you can share resources and join the very active ITGS forum
- Check the IBO events calendar on the OCC for details of workshops in your region
- Share this Subject Report with your candidates

Higher level paper three

Component grade boundaries

Grade:	1	2	3	4	5	6	7
Mark range:	0 - 3	4 - 7	8 - 12	13 - 15	16 - 19	20 - 22	23 - 30

The areas of the programme and examination that appeared difficult for the candidates

The level of subject knowledge was mostly very low. There were significant difficulties in both the technical knowledge and the ability to analyze issues.

A list of additional technical terms was provided in the stimulus material. Only a few candidates could give accurate definitions and descriptions. The central purpose of this part of the course is to research a scenario.

In most cases there was no evidence that any research had been carried out at all. It is expected that the arguments given are supported by real – world examples of situations that are similar to those in the case study.

Often responses were vague or lacked depth. Claims that technological differences between the villages could produce compatibility issues without explained how this could be achieved were not sufficient to gain marks. Extended responses questions, where is necessary to analyze and evaluate, were poorly done as most candidates only described issues without offering any more penetrating insight.

The levels of knowledge, understanding and skill demonstrated

Technical knowledge did not go beyond superficial points. In most cases facts were not known and the candidates guessed or applied common sense. In other cases there was evidence of the candidates getting basic concepts wrong.

In Question 3 candidates are required to write an extended response. Their answers are marked according to the markband for this question.

In order to reach Level 4 (10-12 marks) candidates are expected to include evidence of independent research. This could refer to an interview, a visit to an organisation, exchange of emails, a questionnaire or research from texts and online resources. In many papers independent research was not evident.

Several candidates, who had carried out extensive independent research, gained low marks as they failed to incorporate the research into their arguments. This group of candidates simply described the research and did not relate it to the question. In some cases they failed to answer the question. For example, a discussion of offsite storage of backups (as part of a disaster recovery plan) could be supported by a description of the backup routines in a local hospital or the backup policies described by a medical specialist who had visited their classroom. Successful candidates used phrases such as ‘this type of disaster recovery plan was evident in hospital XYZ where the network manager backs up off site....’ or ‘Dr X from hospital XYZ explained the importance of offsite backup...’

The strengths and weaknesses of the candidates in the treatment of individual questions

Question 1

- a) Some candidates had a basic understanding of bandwidth but in most cases it did not go beyond common knowledge that the general public would know. Accurate definitions were scarce.
- b) A significant number of candidates failed to answer the question despite the fact it was included in the case study glossary

Question 2

- a) Many candidates clearly had no idea what it means for systems to be incompatible. Most of them simply restated the information from the stimulus material (Village A has this and Village C has this), but with little explanation of what that may mean in terms of compatibility. There was little evidence that they considered issues of data compatibility for the new EMR system which was what the question asked. Many took the line that compatibility mean suitability in the local circumstances.

- b) This question was the most successful. Most candidates wrote about telemedicine with some appreciation that the new IT systems can improve communications and hence medical consultations, but did not explained technically how these technologies work and what are the elements necessary to carry them out. Very few mentioned something specific as exchanging of x-ray images or medical observations.

Question 3

This question was not well answered. Most candidates seems not to know what a disaster recovery plan was even though it appear in the glossary and as one of the challenges that Dr Ogala has to face. There was hardly a reference to research and in some cases, as has been stated earlier, the candidates failed to link the research with the situation in the case study. The only idea that gained credit in many cases was the awareness of backups, but lacked reference to the technical aspects of this practice. Many candidates talked about data redundancy as if this is an undesirable state that a good recovery plan could avoid. Only few candidates reach the higher marks. Most answers were descriptive and a conclusion was in general not present.

Recommendations and guidance for the teaching of future candidates

- They should emphasize the terms that are listed at the end of the case study and insist that the candidates look them up and learn what they mean, as they will often be specifically asked in questions.
- Guest speakers, independent research and field trip should continue to be encouraged as it gives candidates a deeper insight into the Case Study establishing a relationship with a real life scenario.
- Teachers must instruct/advise candidates to link their responses with the stimulus material and avoid generalized evaluations in Q3 as well as giving candidates the opportunity to learn how to integrate research into Q3 questions.
- They should have plenty of practice in making projections from what they have researched and in producing solutions to problems related to the case study.
- As always, the technical knowledge should be sound and the IT systems related to a specific situation must be technically explained.