Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students’ responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students’ scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students’ reactions to a particular paper. Assumptions about future mark schemes on the basis of one year’s document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from aqa.org.uk
Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.
General guidance notes for examiners

Overall guidelines

1. All examples accepted should be clearly related to the subject area and should not be “generalised” examples.

2. Attention should be paid to ensure that marks are not awarded for simple restating of the question or the stem, often involving the exact same terms.

3. It should be remembered that scripts could be seen after they are marked and so consistency of approach and correct mechanics of marking are essential.

4. Rules on positioning of ticks and marks are to aid in checking and remarking of scripts.

5. Do not expect the candidate to use the exact wording given in the mark scheme. If you are in doubt as to the correctness of an answer given by the candidate, consult your Team Leader.

6. The answers given in the mark scheme are exemplars. Credit must be given for other correct answers not given in the mark scheme. Please refer to Team Leaders where there is any doubt.

7. One-word answers, where acceptable, will be indicated on the question paper.

8. The meaning of ICT-specific words and phrases are generally as defined by BCS Glossary of Computing and ICT (current edition).

Specific marking guidelines

9. The basic rule is one mark one tick. The tick to be positioned at the point where the mark is gained in the answer and definitely not in the margin.

10. The only figures in the margin should be sub-totals for parts of questions and a final total for the whole question in the box provided.
Michelle explained that the PopUp Bank had a hot restart facility and recommended that all organisations operating large scale systems need to be prepared should a disaster occur.

Explain how a hot restart facility is used should a disaster occur. [3 marks]

<table>
<thead>
<tr>
<th>Purpose of the Question</th>
<th>To assess knowledge of disaster recovery standby arrangements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance for examiners on how to mark this question</td>
<td>One mark for each valid point and one mark for each valid extension.</td>
</tr>
<tr>
<td>Example answer</td>
<td>A hot restart facility is a duplication of the operational computer facility. (1) If the operational computer fails, (1) the hot restart facility can be used almost immediately. (1)</td>
</tr>
<tr>
<td>Method of marking</td>
<td>Indirect</td>
</tr>
<tr>
<td>Monitoring regime</td>
<td>Seeding</td>
</tr>
<tr>
<td>Area of Specification</td>
<td>3.10.4 AO1=3</td>
</tr>
</tbody>
</table>
### Purpose of the Question
To assess knowledge of disaster recovery standby arrangements.

### Guidance for examiners on how to mark this question
One mark for each valid point and each valid extension. Note that there may be alternative answers.

If the answer contains backup points, but no recovery options, maximum five marks.

This is a depth or breadth question.

### Example answer
Organisations could use a cold start facility (1) which consists of premises ready to receive hardware; (1) this has to be sourced at the time of the disaster. (1) This means there will be a delay before an operational service becomes available. (1)

A warm start facility (1) could also be used. This consists of premises with hardware already installed, but which is not kept updated. (1)

An alternative could be a reciprocal arrangement (1) with another organisation which uses the same hardware. (1)

### Method of marking
Indirect

### Monitoring regime
Seeding

### Area of Specification
3.10.4  AO1=5, AO2=3
Explain the differences between the Data Protection Act 1998 and the General Data Protection Regulations 2018. [15 marks]

**Purpose of the Question**
To assess knowledge and understanding of past and new data protection legislation.

**Guidance for examiners on how to mark this question**
Banded marking – see below. Before marking this question, examiners must study the ICO website. Please see https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/

A non-inclusive list of differences include:

- DPA is UK only, GDPR is Europe wide
- DPA subject access costs £10, GDPR subject access is free
- DPA is for personal data, GDPR recognises personal data and sensitive personal data, including on-line identifiers
- DPA – no need for Data Protection Officer. GDPR requires a DPO where organisation has more than 250 employees
- DPA- Privacy Impact Assessment not a legal requirement. GDPR – PIA is mandatory
- DPA – No need to opt in. Opt in is mandatory for GDPR
- DPA max fine is £500,000. For GDPR max fine is 4m euros or 4% of worldwide turnover, whichever is the greater
- DPA – parental consent n/a. For GDPR, parental consent required
- DPA – Breaches – no time limit, GDPR, breaches to be reported in 72 hours
- DPA has 8 principles, GDPR has six principles

**Example answer**

**Banded Marking**

**Zero mark [0 marks]**
Candidate has written nothing that is worthy of credit.

**Low mark range [1-5 marks]**
Candidate has made some attempt at explaining one or two differences but content is limited and not fully understood by the candidate.

**Mid mark range [6-10 marks]**
Candidate has explained at least at least two differences, but answer lacks depth..

**High mark range [11-15 marks]**
Candidate has clearly understood and explained at least three differences.

**Method of marking**
Direct
<table>
<thead>
<tr>
<th><strong>Monitoring regime</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Double marking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Area of Specification</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6.1 AO1 = 6, AO2 = 9</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Purpose of the Question</strong></td>
</tr>
<tr>
<td><strong>Guidance for examiners on how to mark this question</strong></td>
</tr>
<tr>
<td><strong>Example answer</strong></td>
</tr>
<tr>
<td><strong>Method of marking</strong></td>
</tr>
<tr>
<td><strong>Monitoring regime</strong></td>
</tr>
<tr>
<td><strong>Area of Specification</strong></td>
</tr>
</tbody>
</table>
Michelle stated that, for banking systems, she recommended that all stages of the Systems Development Life Cycle should be used. Describe the stages of the Systems Development Life Cycle. [15 marks]

**Purpose of the Question**
To assess knowledge and understanding of the SDLC.

**Guidance for examiners on how to mark this question**
Note that the textbook names and descriptions for the SDLC stages differ, with some omitting Stage 6 (Review and Maintenance) and others referring to Stage 3 variously as Construction or Implementation.

**Example answer**
**Banded Marking**
**Zero mark [0 marks]**
Candidate has written nothing that is worthy of credit.

**Low mark range [1-5 marks]**
Candidate has briefly described at least two stages of the SDLC or has outlined or listed most stages.

**Mid mark range [6-10 marks]**
Candidate has briefly described at most stages of the SDLC and shows a limited knowledge and understanding of each.

**High mark range [11-15 marks]**
Candidate has described most stages of the SDLC and demonstrated an in depth understanding of the concept.

**Method of marking**
Direct

**Monitoring regime**
Double marking

**Area of Specification**
3.8.2 AO1= 5, AO2=10
5(a) For the maintenance categories described in Table 1, identify the category from the list below and write the appropriate letter A, B, or C in each box.

A – Perfective maintenance
B – Adaptive maintenance
C – Corrective maintenance

| Table 1 |
|-------------------------|-------------------|
| Maintenance Categories  | Letter            |
| (i) Minor amendments to operational systems that are needed for the business to continue |   |
| (ii) Cosmetic changes to improve the appearance/usability of a system |   |

Purpose of the Question
Assesses knowledge and understanding of maintenance categories.

Answers
(i) = B
(ii) = A

Method of marking
Auto-mark as above.

Area of the Specification
3.10.5, AO1=1, AO2=1
<table>
<thead>
<tr>
<th>5(b)</th>
<th>Discuss the similarities and differences between systems maintenance and user support.</th>
<th>[12 marks]</th>
</tr>
</thead>
</table>

**Purpose of the Question**
To assess the candidate's knowledge and understanding of systems maintenance and user support.

**Guidance for examiners on how to mark this question**
Banded marking – see below.

**Example answer**

**Banded Marking**

**Zero mark [0 marks]**
Candidate has written nothing that is worthy of credit.

**Low mark range [1-4 marks]**
Candidate has some understanding of systems maintenance or user support, but not both. Similarities and differences between the two are not mentioned, or referred to only briefly.

**Mid mark range [5-8 marks]**
Candidate has a general understanding of both systems maintenance and user support. Discussion of the similarities and/or differences is limited.

**High mark range [9-12 marks]**
Candidate has a clear understanding of both the similarities and differences between systems maintenance and user support and has discussed these fully.

**Method of marking**
Direct

**Monitoring regime**
Double marked

**Area of the Specification**
3.10.5, AO1=6, AO2=6

**Notes to examiners (post standardising move content to Example answer cell).**
Provide examples from Standardising scripts.
<table>
<thead>
<tr>
<th></th>
<th>Describe the factors that influence an ICT strategy.</th>
<th>[6 marks]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of the Question</strong></td>
<td>To determine knowledge of factors that affect ICT strategy.</td>
<td></td>
</tr>
<tr>
<td><strong>Guidance for examiners on how to mark this question</strong></td>
<td>A depth or breadth question. One mark for identifying a factor and up to two marks for explanatory points or examples.</td>
<td></td>
</tr>
<tr>
<td><strong>Example answer</strong></td>
<td>Legacy systems (1) should be considered, as any strategy may be constrained by old systems that may be difficult or costly to convert. (1) Business goals (1) is an important factor. An ICT strategy must provide facilities and systems necessary to achieve these goals. (1) Other factors are available finance for the strategy (1) and legislation. (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Method of marking</strong></td>
<td>Indirect</td>
<td></td>
</tr>
<tr>
<td><strong>Monitoring regime</strong></td>
<td>Seeding</td>
<td></td>
</tr>
<tr>
<td><strong>Area of the Specification</strong></td>
<td>3.4.1. AO1=4, AO2=2</td>
<td></td>
</tr>
</tbody>
</table>
List the main items of data needed by an online ordering system. [6 marks]

**Purpose of the Question**
To test candidate’s knowledge and understanding of the information needs of different activities within an organisation.

**Guidance for examiners on how to mark this question**
One mark for each valid data item. Non-exhaustive examples are: customer name, customer address, delivery address, item ordered, item cost, number of items ordered, method of payment. Note data items internal to an ordering system (say price, order number etc.) are also valid items.

**Example answer**
Customer name (1)  
Customer address (1)  
Item ordered (1)  
Item cost (1)  
Number of items ordered (1)  
Method of payment (1)

**Method of marking**
Indirect

**Monitoring regime**
Seeded

**Area of Specification**
3.2.2, AO1=3, AO2=3
| 7(b) | Describe how internal and external ICT systems may be used to process a customer’s order. | [8 marks] |

**Purpose of the Question**  
Knowledge and understanding of:  
i) Types of ICT systems and their uses.  
ii) The need for information to be transferred between ICT systems both internally and externally.

**Guidance for examiners on how to mark this question**  
One mark for each valid point made. Maximum 6 marks if only internal or only external systems are referenced.

**Example answer**  
An ordering system will require access to a stock control system (1) to see if the item ordered is available (1) and to confirm its price. (1) Details of the customer and the order may be kept on a CRM system, (1) in order to contact the customer for future sales. (1) Order details may also be used by MIS systems (1) to analyse sales.  
Payment and delivery is likely to be achieved using external systems provided by banks (1) and couriers. (1)

**Method of marking**  
Indirect

**Monitoring regime**  
Seeded

**Area of Specification**  
3.2.2, 3.2.8, 3.2.9  AO1= 4, AO2=4
"The growth and complexity of ICT systems for organisations has outpaced the development of security systems and procedures to protect those systems."

Using examples, discuss the extent to which you agree or disagree with this statement.

In this question you will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.

<table>
<thead>
<tr>
<th>Purpose of the Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>To assess the candidate’s understanding of emerging technologies and the security systems and procedures needed to protect them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Guidance for examiners on how to mark this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>No ticks or other annotation to be used on the script, just the final total. Start at the bottom band and work up.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero mark [0 marks]</td>
</tr>
<tr>
<td>Candidate has written nothing that is worthy of credit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low mark range [1-5 marks]</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two ICT systems and/or security arrangements are mentioned but these are described, rather than discussed. Typically, the systems are confined to long-established and understood areas, such as internet shopping or email. Security arrangements are poorly described and limited to software measures, such as firewalls and virus guards. No examples/poor examples are included. No agreement or disagreement is offered.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mid mark range [6-10 marks]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT systems and/or security arrangements are explained, rather than discussed. Some reference is made to the increasing growth and complexity of ICT systems, but existing and well-understood security arrangements form the main part of the essay. Neither ICT systems nor security arrangements are explained in any depth. Some examples are used and some attempt is made to discuss the extent of agreement or disagreement with the statement.</td>
</tr>
</tbody>
</table>
The candidate uses a form and style of writing which is sometimes appropriate for its purpose but with many deficiencies. Candidate has expressed straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Information or arguments may sometimes stray from the point or may be weakly presented. There may be some errors of spelling, punctuation and grammar but not such as to cause problems in the reader’s understanding and not such as to suggest a weakness in these areas. Text is legible.

**Good mark range [11-15 marks]**

ICT systems and security arrangements are discussed and relevant examples are included. However, the extent of the candidate’s agreement or disagreement with the statement is understated or unclear.

The candidate has, in the main, used a form and style of writing appropriate for its purpose, with only occasional lapses. Candidate has expressed moderately complex ideas clearly and reasonably fluently. Candidate has used well-linked sentences and paragraphs. Information or arguments are generally relevant and well structured. There may be occasional errors of spelling, punctuation and grammar. Text is legible.

**High mark range [16-20 marks]**

ICT systems and security arrangements are discussed with authority, with numerous and relevant examples, and a clear justified statement is made regarding the degree of agreement or disagreement. All meanings and arguments are clear.

The candidate has selected and used a form and style of writing appropriate to purpose and has expressed complex ideas clearly and fluently. Sentences and paragraphs follow on from one another clearly and coherently. Specialist vocabulary has been used appropriately. There are few, if any, errors of spelling, punctuation and grammar. Text is legible.

**Method of marking**

Direct

**Monitoring regime**

Double marked

**Area of the Specification**

3.1.3, 3.5.1, 3.10.4  AO1=10, AO2= 10