



Rewarding Learning

ADVANCED
General Certificate of Education
2019

Professional Business Services

Assessment Unit A2 1

assessing

Technology in Business

[APB11]

WEDNESDAY 29 MAY, MORNING

MARK
SCHEME

General Marking Instructions

Introduction

The main purpose of the mark scheme is to ensure that examinations are marked accurately, consistently and fairly. The mark scheme provides examiners with an indication of the nature and range of candidates' responses likely to be worthy of credit. It also sets out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for **GCE Professional Business Services**.

Candidates should be able to:

- AO1** Demonstrate knowledge and understanding of terms, concepts, theories, methods and models used by professional business services firms and their client businesses.
- AO2** Apply knowledge and understanding of concepts, theories, methods and models used by professional business services firms and their client businesses.
- AO3** Investigate, analyse and evaluate concepts, theories, methods and models as used by professional business services firms and their client businesses.

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 17- or 18-year-old which is the age at which the majority of candidates sit their GCE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 17- or 18-year-old GCE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Marking calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error. To avoid a candidate being penalised, marks can be awarded where correct conclusions or inferences are made from their incorrect calculations.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication. Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement.

The following guidance is provided to assist examiners.

- **Threshold performance:** Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.
- **Intermediate performance:** Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.
- **High performance:** Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within either three or four levels of response.

Where there are three levels of response, quality of written communication is distinguished as follows:

Level 1: Quality of written communication is basic.

Level 2: Quality of written communication is good.

Level 3: Quality of written communication is excellent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Basic): The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Good): The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

Level 3 (Excellent): The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

Where there are four levels of response, quality of written communication is distinguished as follows:

Level 1: Quality of written communication is basic.

Level 2: Quality of written communication is satisfactory.

Level 3: Quality of written communication is good.

Level 4: Quality of written communication is excellent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below.

Level 1 (Basic): The candidate makes only a basic selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Satisfactory): The candidate makes a satisfactory selection and use of an appropriate form and style of writing. Relevant material is organised with some degree of clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a satisfactory standard to make meaning evident.

Level 3 (Good): The candidate makes a good selection and use of an appropriate form and style of writing. Relevant material is organised with good clarity and coherence. There is good use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a good standard to make meaning clear.

Level 4 (Excellent): The candidate successfully selects and used the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of the highest standard to make meaning absolutely clear.

1 AO1

Responses may include:

- communication
- managing people
- financial management
- business operations

(4 × [1])

[4]

**AVAILABLE
MARKS**

4

2 AO1

(a) Transaction Processing Systems (TPS)

Responses may include:

- The efficient processing of transactions – this is important to the success of any business. With the changes in technology and client demand for immediate action. Transaction processing systems are designed to instantaneously update transaction data.
- Reliability – businesses rely heavily on their transaction processing systems. This enables them to manage resources effectively.
- Controlled access – transaction processing systems enable authorised users to access business data held within the system: mitigating against risk.
- Batch transaction processing – the collection and storage of data for processing at a scheduled time or when there is sufficient data. Real time transaction processing – the immediate processing of data.
- Inflexibility – a transaction processing system wants every transaction to be processed in the same way regardless of the user, the computer or the time of day. If a transaction processing system were flexible, there would be too many opportunities for non-standard operations.
- Rapid processing – is vital to the success of any business or organisation. Transaction processing systems are designed to process transactions almost instantly, ensuring that customer data is available when required.

All valid responses will be given credit

[1] feature identified

[2] feature identified with basic description

[3] feature identified with good description

[4] feature identified with excellent description

[4]

(b) Management Information Systems (MIS)

Responses may include:

- Data collection – Businesses use a management information system to store data. The management information system stores the information in one or two database systems. The first kind of database, the relational database, stores input from users, then relates that information to other information throughout the system. The database subsequently puts information into graphs or charts so users can compare data. The second kind of database, the hierarchical database, stores data in the order that it was received, but provides no comparison tables for the user.
- Report Generation – While the Management Information System serves to store data, it also uses that data to generate reports. Users of the system determine the types of reports, with specific templates available in the system for various types of reporting. When prompted by the user, the system compiles the report required, inserting data into the template, then printing the report for the business.

- Integration – The Management Information System functions with open access. Open access means that the primary Management Information System can be connected to, or integrated with, other systems within the business, enabling changes to data from different sources and from multiple locations. This function provides two important outcomes. Businesses can update the system to provide information in conjunction with policies and regulations, and the system can be maintained without specialists.
- Scalability – An important feature of a Management Information System is that businesses can purchase a small version of a system and then, over time, add to it as finances allow. Businesses can add increased data capabilities, as well as system features, to the initial system as the business grows, eliminating the need for the business owner to purchase an entirely new system every few years.

All valid responses will be given credit

[1] feature identified

[2] feature identified with basic description

[3] feature identified with good description

[4] feature identified with excellent description

[4]

8

3 AO1, AO2, AO3

Responses may include:

- Convenience – H2O benefit from their booking system being open 24/7 to receive reservations – many customers surf the Internet outside of business hours and they are more likely to make reservations on the spot than trying to remember to call back the next day.
- Cost/Commission is charged – if H2O use Chartam Ltd's online booking system they will have to pay a fee or a percentage charge of their sales.
- Customer service – Chartam Ltd will only deal with online bookings. If customers of H2O have a query they need to contact them directly.
- Minimise workload – online booking system handles all aspects of the booking, e.g. automatically ensures that bookings can only be received when they have availability; gathers all the information required during the booking process so they don't have to waste time asking for more information; sends out an automated email to the booking party as a confirmation of the booking; automatically updates their availability when the booking has been processed.
- All their customer data is in a structured system – Chartam Ltd uses an online booking system which handles the bookings. Chartam Ltd will have all their previous customer's data in a structured system. This customer list is often one of Chartam Ltd best-valued resources in their business and they want this data both accessible and structured. H2O will benefit from all of this.
- Up selling – Chartam Ltd's booking system should allow for H2O to offer extras so that their customers will experience the enhanced features and options.
- Discount codes – are a great way for H2O to market their business during and off-peak periods or late available. Chartam Ltd need to ensure that their online booking system can support discount codes for H2O customers.
- Online payment – This reduces manual workload and provide their customers with an easy and safe way to both book and pay.
- Expensive to maintain and install.

All valid responses will be given credit

[0] is awarded for a response not worthy of credit

Level 1 ([1]–[4]) Basic

- Basic knowledge and understanding of the suitability and effectiveness of a reservation system for H2O and their users.
- Application is basic with limited reference to H2O and their users.
- Analysis of the suitability and effectiveness of a reservation system for H2O and their users is basic.
- Evaluation of the suitability and effectiveness of a reservation system for H2O and their users is basic.
- Judgement is limited and may or may not be supported by the candidates own knowledge.
- The quality of the candidate’s written communication is basic.

Level 2 ([5]–[8]) Satisfactory

- Satisfactory knowledge and understanding of the suitability and effectiveness of a reservation system for H2O and their users.
- Application is satisfactory with some reference to H2O and their users.
- Analysis of the suitability and effectiveness of a reservation system for H2O and their users is satisfactory.
- Evaluation of the suitability and effectiveness of a reservation system for H2O and their users is satisfactory.
- Judgement is partially reasoned and supported by the candidate’s own knowledge and the analysis and evaluation given.
- The quality of the candidate’s written communication is satisfactory.

Level 3 ([9]–[12]) Good

- Good knowledge and understanding of the suitability and effectiveness of a reservation system for H2O and their users.
- Application is good with some reference to H2O and their users.
- Analysis of the suitability and effectiveness of a reservation system for H2O and their users is good.
- Evaluation of the suitability and effectiveness of a reservation system for H2O and their users is good.
- Judgement is partially reasoned and supported by the candidate’s own knowledge and the analysis and evaluation given.
- The quality of the candidate’s written communication is good.

Level 4 ([13]–[16]) Excellent

- Excellent knowledge and understanding of the effectiveness of a reservation system for H2O and their users.
- Application is excellent with clear reference to H2O and their users.
- Analysis of the effectiveness of a reservation system for H2O and their users is excellent.
- Evaluation of the suitability and effectiveness of a reservation system for H2O and their users is appropriate, clear and logically based on a thorough analysis.
- Judgement is fully justified and informed by candidate’s own knowledge and the analysis given.
- The quality of the candidate’s written communication is excellent. [16]

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4 (a) A02

Responses may include:

- Chartam Ltd is required to perform an analysis of workstations in order to evaluate the safety and health conditions.
- Chartam Ltd is required to provide training to employees in the use of workstations components.
- Chartam Ltd must ensure employees take regular breaks from screens or changes in activity.

- Chartam Ltd must provide regular eye tests for workstation users and may pay for glasses.
- Chartam Ltd employees have a responsibility to use workstations and equipment correctly, in accordance with training provided by their employer.
- Chartam Ltd employees have a responsibility to bring problems to the attention of their employers immediately and cooperate to resolve any issues that may arise.

All valid responses will be given credit

[1] feature identified

[2] feature identified with explanation to Chartam Ltd

(3 × [2])

[6]

(b) AO1, AO2, AO3

Responses may include:

Files backup –

- Data backup and recovery should be an integral part of the business continuity plan and information technology disaster recovery plan for Chartam Ltd. Developing a data backup strategy begins with identifying what data to backup, selecting and implementing hardware and software backup procedures, scheduling and conducting backups and periodically validating that data has been backup within Chartam Ltd.
- If Chartam Ltd did not have a disaster recovery plan they could face a number of consequences:
 1. Time and money wasted re-collecting and re-inputting data all over again. There is no guarantee that this data will still be available.
 2. Suitable replacement equipment or premises may not be easily available.
 3. Loss of reputation and credibility for failing to keep data safe.
 4. Loss of business as Chartam Ltd may be unable to function normally. A loss of data may lead to orders not being fulfilled (as there is no record of them) and as a result customers go elsewhere.

Timescale for Backup –

- Chartam Ltd generates large amounts of data and these files are continuously updated on a regular basis. If the data is not backed up regularly it can be lost, corrupted, compromised or stolen through hardware failure, human error, hacking and malware. This could result in significant business disruption for Chartam Ltd.
- Data should be backed up frequently. Loss of data is unacceptable and could result in large fines. The business impact analysis should evaluate the potential for lost data and define the 'recovery point objective'. Data restoration times should be confirmed and compared with the IT and business function recovery time objectives.

Location and storage methods –

- Chartam Ltd needs to identify data on their network servers, desktop computers and wireless devices that needs to be backed up along with other hard copy records and information. Chartams Ltd plan should include regularly scheduled backups from wireless devices, laptop computers and desktop computers to a network server. Data on Chartam Ltd's server can then be backed up. Backing up hard copy vital records can be accomplished by scanning paper records into digital formats and allowing them to be backed up along with other digital data.

- Tapes, cartridges and large capacity USB drives with integrated data backup software are effective means for Chartam Ltd to backup data. The frequency of backups, security of the backups and secure off-site storage should be addressed in Chartam Ltd’s plan. Backups should be stored with the same level of security as the original data.
- Many vendors offer online data backup services including storage in the ‘cloud’. This is a cost-effective solution for Chartam Ltd with an internet connection.

Key personnel and roles identified –

- Directors of Chartam Ltd may have a legal liability, under the Data Protection Act, if data has been accessed by third parties.
- Senior management have a role in relation to implementation and association policy and procedures.
- Designated Senior personnel Ms M Harris to deal with it.
- Documentation

All valid responses will be given credit

[0] is awarded for a response not worthy of credit

Level 1 ([1]–[4]) Basic

- Basic knowledge and understanding of the main features of a disaster recovery plan that Chartam Ltd must have.
- Application is basic with limited reference to Chartam Ltd.
- Analysis of the main features of a disaster recovery plan is basic.
- The quality of the candidate’s written communication is basic.

Level 2 ([5]–[8]) Satisfactory

- Satisfactory knowledge and understanding of the main features of a disaster recovery plan that Chartam Ltd must have.
- Application is satisfactory with some reference to Chartam Ltd.
- Analysis of the main features of a disaster recovery plan is satisfactory.
- The quality of the candidate’s written communication is satisfactory.

Level 3 ([9]–[12]) Good

- Good knowledge and understanding of the main features of a disaster recovery plan that Chartam Ltd must have.
- Application is good with some reference to Chartam Ltd.
- Analysis of the main features of a disaster recovery plan is good.
- The quality of the candidate’s written communication is good.

Level 4 ([13]–[16]) Excellent

- Excellent knowledge and understanding of the main features of a disaster recovery plan that Chartam Ltd must have.
- Application is excellent with clear reference to Chartam Ltd.
- Analysis of the main features of a disaster recovery plan is excellent.
- The quality of the candidate’s written communication is excellent. [16]

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5 AO1, AO2, AO3

Social, Moral and Ethical issues may include:

- Privacy issues – data which is captured and stored correctly will offer protection to both employees and customers, in that they have the assurance that their personal data will not be exploited by either Chartam Ltd or third parties, for example for marketing purposes. This will mean that Chartam Ltd need to respect the personal data they hold and only use it for agreed purposes, meaning they will have to take steps to ensure this happens.

- Data Storage – Chartam Ltd need to take measures to ensure that the data they retain is stored securely which has both data management and cost implications for Chartam Ltd. Effective data storage is likely to be of benefit to Chartam Ltd's corporate image and also an effective promotional tool.
- Chartam Ltd's customers may enjoy the benefits of selective offers e.g. discounts/priority access associated with Chartam Ltd keeping records of their personal interests, shopping trends and the feedback they provide. Some customers may consider this to be unwanted communication which is an intrusion on their time, privacy and can become an irritant.
- Access – Chartam Ltd needs to ensure that only authorised employees have access to the data they collect and their activity in relation to its use is carefully monitored and restricted, this will mean that the risk of a data breach or theft is minimised. They will also need to ensure that they protect their data and systems from being hacked by external sources.

All valid responses will be given credit

[0] is awarded for a response not worthy of credit

Level 1 ([1]–[5]) Basic

- Basic knowledge and understanding of the social, moral and ethical issues of using this technology for capturing, storing and analysing this personal information.
- Limited or no relevant application to Chartam Ltd.
- Analysis is basic.
- The quality of the candidate's written communication is basic.

Level 2 ([6]–[10]) Satisfactory

- Satisfactory knowledge and understanding of the social, moral and ethical issues of using this technology for capturing, storing and analysing this personal information.
- Satisfactory application to Chartam Ltd.
- Analysis is satisfactory.
- The quality of the candidate's written communication is satisfactory.

Level 3 ([11]–[15]) Good

- Good knowledge and understanding of the social, moral and ethical issues of using this technology for capturing, storing and analysing this personal information.
- Good application to Chartam Ltd.
- Analysis is clear and coherent.
- The quality of the candidate's written communication is good.

Level 4 ([16]–[20]) Excellent

- Excellent knowledge and understanding of the social, moral and ethical issues of using this technology for capturing, storing and analysing this personal information.
- Excellent application to Chartam Ltd.
- Analysis is appropriate, clear and logical.
- The quality of the candidate's written communication is excellent. [20]

20

6 AO1, AO2, AO3

Responses may include:

Client Needs

- Monitoring – This enables the senior management team to have an efficient monitoring of finance control.
- Training – The benefits of training staff to work with spreadsheets is most evident in Chartam Ltd where employee development and management tracking programmes are implemented.

- Decision Making – Spreadsheets can be used to manipulate complex data, supporting decision making, e.g. analysis of data, goal seeking, scenarios, regression and data mining.

Users

- Training – Although considered to be a very user-friendly system, human errors may cause issues that may lead to Chartam Ltd making decisions based on incorrect data. It is therefore of the utmost importance that all employees at Chartam Ltd are given the proper tools and training which will enable them to produce accurate information gathered from the spreadsheets.
- Specialist features – Spreadsheet features that would benefit Chartam Ltd's financial decision making are:
 1. Format cells, rows and columns, specifying for example, the alignment of text, number of decimal points, height and width of cells.
 2. Copy cell contents to other locations with automatic adjustment of formula from eg B9 to C9.
 3. Determine the effect of several different hypothetical changes of data. This facility is termed 'What-if' calculation.
 4. Insert, move or delete rows and columns.
 5. Use functions such as SUM, AVERAGE, MAX, MIN in formulae.
 6. Write macros to automate common procedures.
 7. Create templates – spreadsheets with formats and formulae already entered, into which new figures may be inserted.
 8. Create multi-dimensional spreadsheet using several sheets, and copy data from one sheet to another.
 9. Create many different types of charts and graphs.

Time

- Time Saving – With the help of spreadsheets Chartam Ltd's employees will be able to track, measure and monitor data, this will save time.

Cost

- Cost Saving – Through proper training Chartam Ltd employees will become more familiar with work practices and shortcuts that would ultimately make their job easier. This could lead to Chartam Ltd employees taking the initiative to find innovative ways to sort or prevent any potential issues, enabling them to make decisions to benefit Chartam Ltd in a positive and profitable way.
- Increased efficiency – If only beginning with the basics of spreadsheets Chartam Ltd employees will already show more efficiency in their daily tasks, leading to greater savings for the company.

Security

- Password protected – The use of passwords enables restricted access to confidential information and also ensures that Chartam Ltd comply with Data Protection Act

All valid responses will be given credit

[0] is awarded for a response not worthy of credit

Level 1 ([1]–[5]) Basic

- Basic knowledge and understanding of the suitability and effectiveness of spreadsheets to support the financial decision making.
- Application is basic with limited reference to Chartam Ltd.
- Analysis of the suitability and effectiveness of spreadsheets to support the financial decision making is basic.
- Evaluation of the suitability and effectiveness of spreadsheets to support the financial decision making is basic.
- No judgement made or judgement is limited and may or may not be supported by the candidate's own knowledge.
- The quality of the candidate's written communication is basic.

Level 2 ([6]–[10]) Satisfactory

- Satisfactory knowledge and understanding of the suitability and effectiveness of spreadsheets to support the financial decision making.
- Application is satisfactory with some reference to Chartam Ltd.
- Analysis of the suitability and effectiveness of spreadsheets to support the financial decision making is satisfactory.
- Evaluation of the suitability and effectiveness of spreadsheets to support the financial decision making is satisfactory.
- Judgement is partially reasoned and supported by the candidate’s own knowledge and the analysis given.
- The quality of the candidate’s written communication is satisfactory.

Level 3 ([11]–[15]) Good

- Good knowledge and understanding of the suitability and effectiveness of spreadsheets to support the financial decision making.
- Application is good with some reference to Chartam Ltd.
- Analysis of the suitability and effectiveness of spreadsheets to support the financial decision making is good.
- Evaluation of the suitability and effectiveness of spreadsheets to support the financial decision making is good.
- Judgement is reasoned and supported by the candidate’s own knowledge and the analysis given.
- The quality of the candidate’s written communication is good.

Level 4 ([16]–[20]) Excellent

- Excellent knowledge and understanding of the suitability and effectiveness of spreadsheets to support the financial decision making.
- Application is excellent with clear reference to Chartam Ltd.
- Analysis of the suitability and effectiveness of spreadsheets to support the financial decision making is excellent.
- Evaluation of the suitability and effectiveness of spreadsheets to support the financial decision making is appropriate, clear and logically based on a thorough analysis of Chartam Ltd.
- Judgement is fully justified and informed by candidate’s own knowledge and the analysis given.
- The quality of the candidate’s written communication is excellent. [20]

Total

**AVAILABLE
MARKS**

20

90