



**General Certificate of Secondary Education
2025**

Digital Technology

Unit 2

Digital Authoring Concepts

[GDG21]

TUESDAY 3 JUNE, AFTERNOON

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

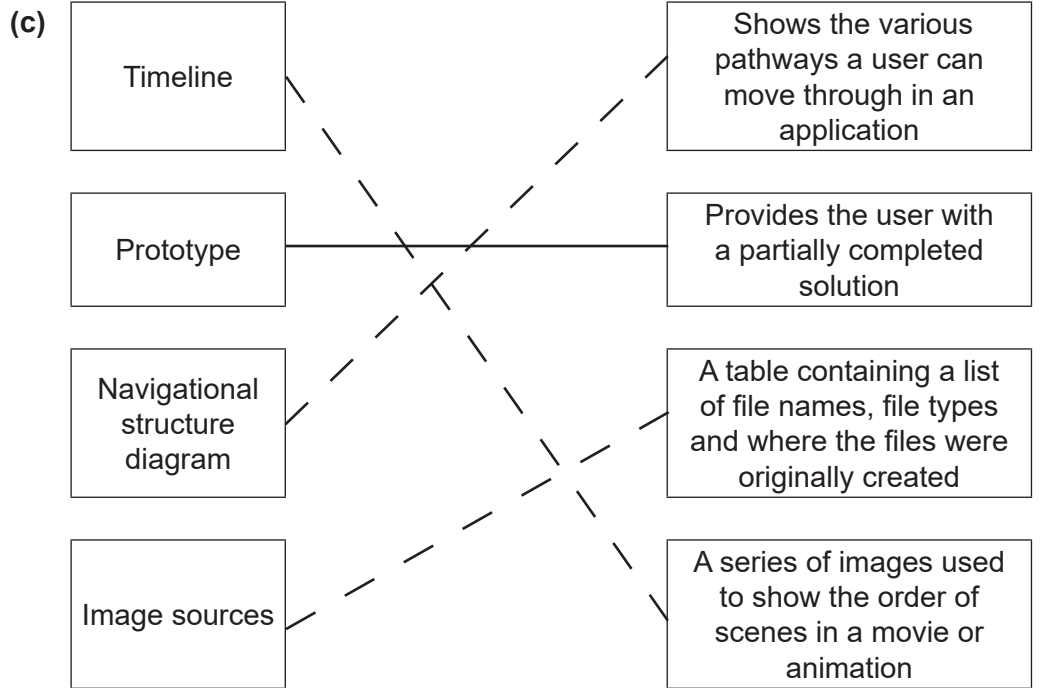
It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

- 1 (a) Answer key: D - Portable Document Format [1]
- (b) Answer key: B - A piece of software that provides additional features for an application [1]
- (c) Answer key: C - HyperText Markup Language [1]
- (d) Answer key: C - An application that can run on many digital devices and operating systems [1]
- (e) Answer key: D - Report [1]
- (f) Answer key: B - Mail merge [1]
- (g) Answer key: B - Form [1]
- (h) Answer key: B - mp3 [1]

- 2 (a)
- | Statement | Tick (✓) |
|--|----------|
| Storyboards contain details about background colours and images | ✓ |
| Storyboards use arrows to show how pages in an application are linked together | |
| Storyboards include details of headings used to store data | |
| A storyboard is a diagram detailing content such as text location and location of headings | ✓ |
| A storyboard can be used to show the user where images will be located | ✓ |
| Storyboards provide details of input devices used to interact with the applications | |
| Storyboards show where navigation buttons are located in a screen | ✓ |
- [4]
- (b) demographic group / group of people [1]
that the app is being developed for [1] [2]

AVAILABLE
MARKS

8



[4]

- (d) Any **three** from:
- field name
 - data type
 - field length
 - validation details
 - example data
 - details of default values
 - details of input masks / field formats to be applied
 - lookup list
 - description of field (or e.g. key field / foreign key)

[3]

13

3 (a) Graphic User Interface or Graphical User Interface

[1]

(b) Window: Any **two** from:

- Area on a computer desktop where actions are carried out by the user
- Multiple windows can be opened
- Only one window can be active at any one time
- Area on screen showing content from one application

Icon: Any **two** from:

- A small picture on a computer desktop/screen
- Shows a short cut for a task or application/represents an application/helps identify an application (app/task also acceptable in place of application)
- User can (double) click on an icon to activate it

Menu: Any **two** from:

- Used to group similar tasks together
- User can expand the menu to select additional tasks
- Presents options to user/List of options
- Suitable example (e.g. Pulldown menu / Popup)

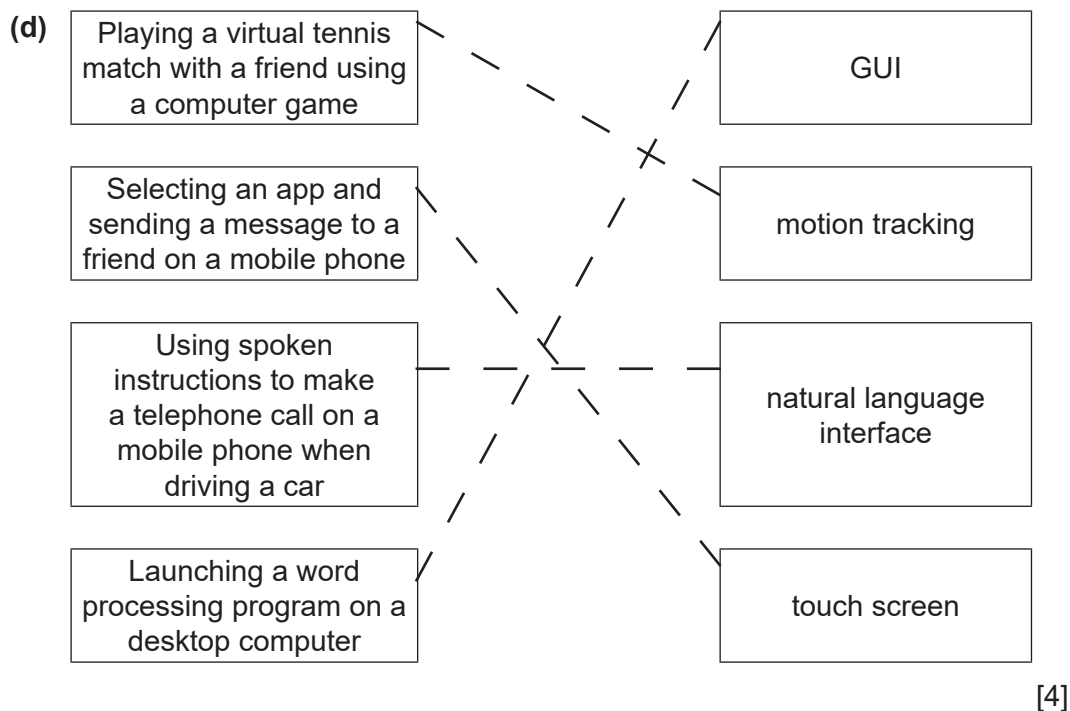
Pointer: Any **two** from:

- On screen icon that moves around the screen
- When the user moves a mouse or similar device
- Place cursor over icon and (double) click to select
- Mouse arrow / icon

[8]

AVAILABLE
MARKS

- (c) (i) Any **two** from:
 suitable for users with limited technical ability
 suitable for users with limited accessibility (must qualify)
 supports hands free interaction with technology (or suitable example) [2]
- (ii) Any **two** from:
 time needed to train device to recognise voice/difficulty with accents
 technical demands of such a system are high, e.g. high RAM /
 processing power / storage
 may only recognise limited commands
 natural language may be ambiguous
 issues around background noise (must qualify) [2]



17

- 4 (a) • one-to-one/1:1 [1]
 • one-to-many/1:many [1]
 • many-to-many/many:many [1] [3]

(b) Entity Relationship Diagram [1]

(c)

Field Name	Field Location	Primary Key / Foreign Key
BookingID	BookingTBL	Primary Key [1]
PetID	BookingTBL	Foreign Key [1]
OwnerID	OwnerTBL	Primary Key [1]

[3]

- (d) (i) OwnerTBL [1]
 PetTBL [1] [2]

(ii)	Field	FirstName	SecondName	PetName	PetType	Town	AVAILABLE MARKS
	Criteria				Cat [1]	Belfast [1]	
						[2]	

(iii)	Field	FirstName	SecondName	PetName	PetType	Town	AVAILABLE MARKS
	Criteria				Cat [1]	Bangor [1]	
	or				Cat [1]	Lisburn [1]	

(or alternatively accept in Criteria row
Cat [1] Bangor [1] OR [1] Lisburn [1])

[4]

(iv)	Field	FirstName	SecondName	PetName	StartDate	NumDays	TotalCost:	AVAILABLE MARKS
	Criteria							

TotalCost: [____ NumDays [1]] [_ * [1]] [_____ 20 [1]]

(must be correct field name, e.g. NoOfDays or NumDay – not acceptable) [3]

(e) Structured Query Language [1]

(f) (i)

```
SELECT    FirstName, SecondName, PostCode [1]
FROM      OwnerTBL [1]
WHERE     Town = Belfast [1]
```

Blank 1: FirstName, SecondName, HouseNum, Street, Town, PostCode
Blank 2: OwnerTBL
Blank 3: Town = Belfast [3]

(ii)

```
SELECT    PetID
FROM      BookingTBL [1]
WHERE     StartDate >= [1] 21/03/2025 [1]
OR        StartDate > [1] 20/03/2025 [1]
```

[3]

25

5 Level 0 [0]

Answer is not worthy of credit.

Level 1 ([1]–[2])

The candidate refers to one [1], or both [2] of the terms (data integrity / data redundancy). Or refers to one and gives an example to illustrate [2]

The candidate makes limited use of spelling, punctuation and grammar.

The meaning of the text is not always clear. The candidate displays a limited form and style appropriate to the question.

The organisation of the answer is limited.

Level 2 ([3]–[4])

The candidate briefly describes one [3] or both [4] of the terms (data integrity / data redundancy) (Descriptions may be illustrated with an example)

The candidate makes satisfactory use of spelling, punctuation and grammar.

The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question.

The organisation of the answer is satisfactory.

Level 3 ([5]–[6])

The candidate fully describes one [5] or both terms [6] with appropriate examples from the example given.

The candidate uses a good standard of spelling, punctuation and grammar.

The meaning of the text is always clear. The candidate demonstrates a good standard of form and style appropriate to the question.

The organisation of the answer is good.

Answers may include:

Integrity

Data integrity is linked to the accuracy/consistency/reliability of data

Data that has integrity refers to high quality data

Data integrity can be helped by ensuring there is only one copy of an item of data stored in a database

Appropriate examples should relate to the incorrect spelling of Jane / Jame or the recording of Brian / B as student first names / reference to 2 different IDs

Redundancy

Data redundancy relates to the unnecessary repetition of data (e.g. a student's name needs only to be recorded once, in case errors are made in spelling)

Data redundancy can lead to problems with data integrity

Appropriate examples should relate to the repetition of the students names with each subject and test score in the table shown.

[6]

AVAILABLE
MARKS

6

- 6 (a) (i) use of more than one media [1] e.g. sound / text / image / animation [1] [2]
- (ii) give input [1] in response to output [1] (realtime dialogue between user and computer) [2]

(b) **E-commerce**

Feature	Advantage	Disadvantage
Online payment	No need to share bank details / money transferred immediately / make payments from anywhere [1]	Not all customers will have access to internet electronic payment methods / fraud / data theft / identity theft [1]
Image display tools e.g. 360° image rotation / video	Allows customer to get a clear impression of product / see full product [1]	Images may not show in all devices / browsers / may take a long time to load / laggy presentation [1]

Social media

Feature	Advantage	Disadvantage
Check-in facilities / Location sharing	Used to let others know where you are / help encourage others to visit / allow you to post reviews / can help you with online maps / find services if lost [1]	Posting locations for others can be abused / undesirables know your location [1]
Creating pages and advertisements to promote a product or event	Used by businesses to track potential customers / global market reach	Not all members of target audience will have social media / too many push notifications [1]

[8]

- (c) Any **two** from:
 interactive multimedia games require complex code [1], this leads to increased cost [1] data use [1]
 complex graphics [1] can lead to streaming issues [1]
 high speed interactions [1] can be affected by poor bandwidth [1]
 complex games / programs [1] mean increased processing demands [1] [4]

AVAILABLE MARKS

16

7 (a)

Statement	TRUE / FALSE
It is text that appears on screen when a user rolls over an image on a web page	FALSE
It is a link you can click on to open a document on a web page	TRUE
It is code you can use to create a web page	FALSE
It is text used to create links to other content on a web page	TRUE
It is information that can be used to provide users with feedback when filling out a form on a web page	FALSE

[5]

(b) (i) ensures assets can easily be located

[1]

(ii) give appropriate file names

[1]

(c) Any **two** from:

- Increase / decrease text size
- Text to voice / speech narrator
- Skip nav
- Alt text on image
- Provide keyboard navigation
- Change background colour / alternate colour scheme
- Zoom image

[2]

(d) Programs can be designed in a way that some lines of program code only need to run if a certain **condition** [1] is met, this is an example of **selection**. [1]

When lines of code are executed again and again, for a set number of times, this is an example of **repetition**. [1]

When lines of code run one after another from beginning to end, this is known as **sequencing**. [1]

[4]

13

8 (a) B

[1]

(b) h1

[1]

(c) B

[1]

(d) B

[1]

(e) Any **two** from:

- bitmap image
- large file size / take up a lot of web space
- take a long time to load / not compressed

[2]

(f) C MyWebsite

[1]

(g) User interactions/actions (or example of user interaction such as button click) [1]

control what appears next on the screen / determines the flow of the program/triggers code [1]

[2]

(h) Cascading Style Sheets

[1]

10

9 (a) (Testing and) making changes [1]
at different stages in development / testing as you build [1] [2]

Definition / Process	Term
Creating two versions of the same application to get feedback from a group of end users	A/B Testing
A document that contains a list of tasks an application should be able to carry out	User requirements
Ensuring an application provides the correct input and output	Black box testing
A process carried out by a programmer to ensure the code works correctly	White box testing
Checking that all links to external web pages take the user to the required location	Navigation testing

[5]

(c) Any **two** from:

- Measure the time taken / how long after a page is loaded [1]
- for an image / digital asset to appear on screen [1]
- Is the image fit for purpose [1]
- Is the image quality appropriate / optimisation / compression [1] [2]

(d) Any **three** from:

- valid
- invalid
- null
- extreme [3]

Total

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12

120