



**General Certificate of Secondary Education
2022**

Digital Technology

Unit 2:

Digital Authoring Concepts

[GDG21]

MONDAY 6 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.

COVID-19 Context

Given the unprecedented circumstances presented by the COVID-19 public health crisis, senior examiners, under the instruction of CCEA awarding organisation, are required to train assistant examiners to apply the mark scheme in case of disrupted learning and lost teaching time. The interpretation and intended application of the mark scheme for this examination series will be communicated through the standardising meeting by the Chief or Principal Examiner and will be monitored through the supervision period. This paragraph will apply to examination series in 2021–2022 only.

- 1 (a) A Hypertext transfer protocol secure [1]
- (b) A Output from a digital application is used as input to another application [1]
- (c) C A composite key is made up of more than one field [1]
- (d) D Template documents which are set up to contain merge-fields [1]
- (e) C On-screen graphic which moves around on screen [1]

2 (a)

Description	Term
Shows the layout of individual screens in a website	Storyboard
Shows the pathways a user can take through the app	Navigational Structure Diagram
An outline of the sequence of a movie or animation	Timeline
Contains the details of the field headings held in a database	Data Dictionary

[4]

(b) (i) Throwaway [1]

(ii) Evolutionary [1]

(c) Any **two** from:

- User may confuse prototype and final system/expectation that all elements of prototype will be in final solution
- Can lead to delays/increased development time
- Increased costs
- Prototyping not suitable for all applications
- System can grow/more features added/changing user requirements

[2]

(d) Any **two** from:

- Contains list of all necessary features of application
- Lists requirements which are easily measured/clearly understood/clearly stated [accept numbered list]
- Uses language easily understood by client
- Contains only requirements that can be attained (within budget/time/limits of available technology)/manageable requirements
- Will include input from end user/client
- Set of numbered requirements

[2]

(e) Any **three** from:

- All browsers support HTML/reference to cross-compatibility
- No additional software needed to support it/easily edited/can use any software to edit
- Most developers are familiar with HTML
- Scripting can be added

[3]

AVAILABLE
MARKS

5

13

Statement	TRUE/FALSE
Icons are used to represent tasks or applications	TRUE [1]
High specification graphics cards are required to run a GUI	TRUE [1]
A lot of training is needed before a GUI can be used properly	FALSE [1]
GUIs use very little RAM and suit inexperienced users	FALSE [1]
Users can select shortcuts using a pointing device	TRUE [1]

[5]

(b) Any **two** from:

- Reflective markers/red-dot tracking/white-dot tracking
- Sensors
- LEDs
- Infrared (camera) but not camera on its own

[2]

(c) Advantages

Any **two** from:

- Input device integrated into device/no additional devices attached
- Intuitive use
- Reference to accessibility issues
- Easy to clean
- 0 for portability

[2]

Disadvantages

Any **two** from:

- Not easily replaced if damaged/difficult to interact with if damaged
- Expensive technology
- Easily damaged
- Sanitary issues (not easily dirtied - reference to germs spreading etc)

[2]

(d) **Level 0 [0]**

Answer is not worthy of credit.

Level 1 ([1]–[2])

The candidate refers to one [1], or two [2] disadvantages, or describes one disadvantage [2] of natural language interfaces/voice data entry in this scenario. 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 two [3] or three [4] disadvantages of natural language interfaces/voice data entry in this scenario. 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 three disadvantages of natural language interfaces/voice data entry in this scenario. 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.

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MARKS

Answers may include:

- Difficulty understanding wide range of voices/accents/not carrying out correct actions/instructions misunderstood
- Increased technical demands/RAM/processing power/storage
- Can only understand limited commands – difficulty ensuring users know those commands
- Security – users speaking PIN codes, etc
- Training
- Background noise
- Accessibility issues (not foreign language)

[6]

**AVAILABLE
MARKS**

17

- 4 Any **two** from:
- Demands on download limits
 - Reliance on good telecommunications link
 - Cost of download/subscription costs
 - Storage/Processing requirements on mobile device
 - Reference to small viewing screen
 - Slow loading time

[2]

5 (a)

Statement	TRUE/FALSE
Relational databases contain more than one table and help increase data redundancy	FALSE
Each table in a relational database contains all of the data about an individual person, place or thing	TRUE
Relational databases increase data integrity as data is not duplicated unnecessarily	TRUE

[3]



[2]

(c)

PlayerID:	String	Character	[1]
CurrentLevel:	Integer	Real	[1]

[2]

- (d) Any **three** from:
- Format check [1]
 - Type check [1]
 - Length check [1]
 - Presence check [1]
 - 0 for range check

[3]

(e)

___ Game Name ___ [1]

Field	PlayerID	FirstName	SecondName	CurrentLevel	
Table	PlayerTBL	PlayerTBL	PlayerTBL	[1]	
Criteria					"Forth Gate"

___ GameLinkTBL ___ [1]

___ GameTBL ___ [1]

[3]

- (f) Alex will use a ___ Report ___ to display the result of the query. He would like to display the players' names in order of SecondName so he uses the ___ Sort ___ facility to do this. The date is added to the bottom of the printout in the ___ footer ___ section.

[3]

(g)	Statement	Tick (✓)
	Macros are small buttons the user can click on to help them complete a task	
	Macros can be added to forms and reports to help with navigation	✓
	Macros are small computer programs used to complete repetitive tasks	✓
	Macros are written using a special programming language for inputting data in a database	

[2]

(h) (i) SELECT PlaterID, FirstName, ___SecondName___ [1]
FROM ___PlayerTBL___ [1]

[2]

(ii) From GameLink TBL [1]
Where GameID = 34 and CurrentLevel = 5
[1] [1] [1]

[4]

24

6 (a) Any **two** from:

- Reduced file size/compressed file format
- Cannot be easily edited/more secure
- Formatting is maintained
- Easily opened without original software/easily opened on any platform

[2]

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

- Reduced file size/compressed [1]
- Remove unnecessary data [1]
- Ease of transmission/loads efficiently [1]

[2]

(ii) My_movie.mp3 My_movie.mp4 My_movie.TIFF

[1]

(c) Additional Software/downloaded software/small program (code)/browser extension [1]

Adds features/enhances application/enhances user experience [1]

[2]

(d) Designed to operate on more than one interface/platform [1] without modification [1]

[2]

(e) (i) Can be used to show/display text

[1]

(ii) Visually impaired: increased text size/text to speech
Colour blind: alternative colour scheme

[2]

12

(j) (i) Uniform Resource Locator [1]

(ii) Statement	TRUE/FALSE
When the website is loaded the following page will be displayed first http://www.mywebsite.com/index.html	TRUE
The following HTML statement will allow the user to open the multimedia page on the website Click here to view the multimedia course	FALSE
The following HTML tag will display logo.jpg on the web page 	FALSE

[3]

AVAILABLE MARKS

22

8 (a)	Description	Test Type
	Alice needs to test the script used to validate a form on her website	White box
	Alice has produced a new version of the database and wants to test it using sample data before the end user receives it	Alpha
	Alice has produced a version of the website and would like to release it to a small number of possible users so she can get feedback from them	Beta
	Alice has produced two versions of the website and wants to release them to different sets of users so she can compare them	A/B
	Alice wants to test the inputs and outputs of her database application to ensure they work correctly and produce	Black Box
	Alice wants to test all parts of the application to ensure they meet the end user requirements	System

[6]

(b) Valid [1]
 Invalid [1]
 Null [1]
 Extreme [1] [4]

10

9 (a)	Statement	TRUE/FALSE
	Evaluation of a system happens only when the system is complete	FALSE
	The end user is never involved in the evaluation process only the programmers are involved in this process	FALSE
	To ensure that a system meets its original design criteria an evaluation must be linked to the user requirements	TRUE
	Evaluation occurs throughout the development process and is used to improve the system being developed	TRUE

[4]

(b)	John wants to ensure that...	Why is this important?	Give an example from the information provided above
	The system is a full and complete solution	One from: All requirements met Meets design/plan Fully functional	Register customers Make bookings Process payments List bookings List payments
		[1]	[1]
	The system is a robust solution	The system needs be able to handle invalid [1]/high volumes of [1]/exceptional [1] data System does not crash... with qualification of answer given	Any reference to managing invalid/high volume/exceptional... examples from above
		[1]	[1]
	The system is an efficient solution	Information is produced when required user response time acceptable (answers related to timeliness/speed - ok) Reference to database design, e.g. no data duplication/use of a relational database	Any reference to time taken to produce reports /register new customers/ process payments/make bookings
		[1]	[1]

[6]

AVAILABLE MARKS

10

10

Definition	Term
The time taken to retrieve a multimedia asset from a server and display that asset on a web page in a browser window	Load Time
A set of symbols used in database queries to compare two data values to produce a TRUE/FALSE output	Logical Operators
Can be used to enter data into more than one table in a database application	SubForm
Provides users with a set format that input data must follow when it is being typed in by the user	Input Mask
A software tool which provides step-by-step instructions during the completion of a task	Wizard

[5]

Total

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5
120