**General Certificate of Secondary Education
2023**

Digital Technology

Unit 2:

Digital Authoring Concepts

[GDG21]

THURSDAY 25 MAY, 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) C database application [1]

(b) D at the bottom of each page on a report [1]

(c) B IF…THEN….ELSE [1]   3

2 (a) Model of a system / first draft / plan / design of an application / shows
what it will look like / example made before production / shows features [1]
May not be fully functional / may need more things added /
partially completed [1]
0 marks for replica or already made up version or naming types of
prototype [2]

(b) Any **two** from:
User can see at early stage how the system will function [1]
Enables the end user to provide feedback [1]
Misunderstandings between End user and Developer are reduced [1]
Keeps development costs down [1]
Allows involvement throughout the process [1]
Early detection of errors/required modifications/early identification of
problems [1]
Users needs more likely to be met/helps ensure requirements met [1] [2]

(c) A storyboard / navigation structure diagram shows how all of the pages
in the website are linked together.

The navigation structure diagram / storyboard shows the content and layout
of each page in the website.

A user requirements document / timeline shows the content of a short
movie created for the website.

The user requirements document / storyboard acts as a contract between
the website developer and their customer. [4]

(d) Any **two** from (but not limited to):
Hyperlinks [1] accept – links to another website / email /
hypertext link **but** [0] for HTML links
Roll over images / alt text [1]
Forms [1]
Videos [1]
Sound (clips) / podcasts [1]
Accessibility examples [1]
Also accept
text to speech [1]
search facility [1]
image gallery [1]
leave reviews/messages/feedback [1]
animation for user to watch [1]
3D model/virtual tour [1]
[0] for changes to brightness/volume [2]

(e) (i) Any **two** from:
Accuracy [1] consistency [1] reliability [1] of data [2]

(ii) Unnecessary [1] repetition [1] of data [2]

(f) Entity Relationship Diagram
[0] for entity relational diagram [1]

(g) Any **two** from:
One to one/1:1 [1]
One to many/1: M [1]
Many to many/M : M [1] [2]

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3 (a)

Statement	Tick (✓)
GUIs require a lot of processing power to run successfully	✓
Users can create their own short cuts	✓
They are the most suitable interface for expert users	
Memory requirements are low when running GUIs	
Dialogue boxes and wizards help users complete complex tasks	✓

[3]

(b) (i) Provides immediate feedback [1]
keeps engaged / less boredom / increase enjoyment / increased
excitement / more enjoyable / feels more realistic / reduces
boredom / increased immersion [1] [2]

(ii) Any **two** from:
high speed interactions need complex programming [1]
longer loading time [1]
inexperienced users overwhelmed [1]
requires more processing power / better graphics card [1]
requires more memory / more storage [1]
specialist hardware may be needed to interact with game [1]
[0] for more powerful hardware – must identify e.g. of hardware [2]

(c) (i) Microphone [1]

(ii) When the instructions are input into the digital device they are
in ____ **Analogue** _____ format.
Before the processor can understand the instructions they must be
converted into _____ **Digital** ___ format. _____ **Key** _____
words are identified in the instructions and compared to a set of
commands stored in a ___ **Dictionary**_____.
Once the correct commands have been identified the correct
instruction can be carried out. [4]

(iii)

Statement	TRUE/FALSE
Natural language instructions can be typed	TRUE
Speech input systems require no training to recognise users voices	FALSE
Users do not need a lot of technical knowledge	TRUE
Background noise can be a problem if instructions are being spoken	TRUE

Accept tick / no tick for TRUE / FALSE [4]

(d) Describe any **three** from:
Easily damaged….if damaged, interaction with technology is affected / expensive to repair
Screens may be limited in size…….. interactions difficult/options limited
Can be expensive
Uses a lot of power…….. issues with use of battery on portable gaming devices/needs recharging/needs to be continually attached to a power source
Hygiene……issues related to spread of bacteria/virus on shared device
May become dirty.....stops it from working correctly
Credit reference to expense once only
[0] for problems related to loss of stylus

For each disadvantage given, student should name the issue and then explain/say why it is a disadvantage [6]

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4 **(a)** 5-6 year olds [1]

(b) Any **three** from (but not exclusively):
Large writing/font [1]
Suitable font [1]
Bright colours [1]
Appropriate text/easy to understand words [1]
Include multimedia, e.g. video/sound/animation/text to voice [1]
Use of/description of appropriate graphics, e.g. cartoon style/good use of graphics/simple icons [1]
limited options/not too many buttons/simple navigation layout [1]
[0] for simple/basic interface must explain what makes it simple/basic [3]

(c) Any **two** from:
Test on range of different devices/platforms/browsers [1]
Use optimised media [1]
Provide plugins/links to plugins for different platforms [1]
Create alternative versions for different platforms [1]
Create using HTML [1]
[0] for test cross-platform compatibility – need indication of how [2]

(d) (i)

File format	Answer
PDF	Portable Document Format
JPEG	Joint Photographic(s) Expert(s) Group

[2]

(ii) AVI

Any **one** from:
• Uncompressed file format
• Supports audio and video – must state BOTH audio and video
• Large file size
[0] for expanding acronym [1]

BMP

Any **one** from:
- Accept ... supports graphics / images
- Uncompressed file format / can be compressed with lossless compression
- No graphics adapter needed to display BMP images
- large file size [1]
- quality depends on resolution [1]
- bitmap image / image [1]
- ref to pixels in image [1]
- [0] for high quality
- [0] for expansion of BMP – need recognition that the file stores an image

[0] for expanding acronym   [1]   **10**

5 **(a)** Any **two** from:
Basket/shopping cart [1]
Image display tools, e.g. 360/enlarge image/video [1]
Reviews/rating/recommendations [1]
Tracking/watch lists/wish list/alerts [1]
Secure payment [1]
Share links to products [1]
Search facility [1]
Help systems [1]
feature for managing collection/delivery [1]
more detail on product [1]
[0] for navigation buttons/generic website features   [2]

(b) **(i)** Any **two** from:
Security/show location [1]
Accidental stream [1]
Concerns about data usage [1]
need stable internet [1] BUT [0] for requires internet
cannot edit [1]
[0] for bullying   [2]

(ii) Entice more views/more interesting post/attract larger audience/helps grow online community
[0] for real-time video – must say why this is an advantage   [1]

(iii) Any **two** from:
Like buttons [1]
Messaging [1]
Check-in [1]
Weblink [1]
Post or content sharing [1]
Page creation [1]
comment [1]
share location [1]
follow others [1]
[0] for search facility   [2]   **7**

AVAILABLE MARKS

6 **(a)** HyperText Markup Language [1]

(b)

HTML Tag	Letter
<i>	**A**
<p>	F
<a>	G
<head>	B
	H
<title>	C
<b>	D
<body>	E
	I

[8]

(c) **Level 0 ([0])**
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate refers to one [1], or two [2], or describes one [2] advantages of using an authoring application. 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] advantages of using an authoring application. 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 advantages of using an authoring application. 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 could include:
HTML created automatically
HTML updated if content moved
Templates provided/wizards/helps create professional looking websites
GUI interface/suitable for novice users/intuitive
Don't need extensive HTML knowledge/do not need a lot of technical knowledge/ no training needed
Can edit HTML/add scripting
not just faster development – must qualify
Reference to or description of WYSIWYG feature [6]

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7 **(a)**

Statement	TRUE/FALSE
Forms can be used to create menus to help the user access different parts of the database	TRUE
Queries can be used to calculate additional data items	TRUE
The results of a query can only be displayed on a report	FALSE
Reports can be used to combine data from more than one database table	TRUE
Data can easily be added to a database using a report	FALSE
Data can easily be added to a database table using a form	TRUE
Macros are used to create lookup lists in database tables	FALSE

[7]

(b) **(i)** Uniquely identify a record/data item [1]

(ii) RunnerID/ProductID or e.g. 1001 [1]
Note – [0] for e.g.s starting with P0 (key fields – not foreign key fields)

(c)

Field Name	**OrderID**	**RunnerID**	Surname	ProductID	Description	SellingPrice	Quantity	
Table Name	OrderTBL	RunnerTBL/ OrderTBL	RunnerTBL	ProductTBL/ OrderTBL	ProductTBL	ProductTBL	OrderTBL	[1]

[1]

(d)

Field Name	**Surname**	FirstName	Address	PostCode	**SellingPrice**	[1]
Table Name	**RunnerTBL**	RunnerTBL	RunnerTBL	RunnerTBL	ProductTBL	[1]
Criteria					>10	[1]
Show	**TRUE**	TRUE	TRUE	TRUE	FALSE	[1]

Also accept e.g. £10/£10.00

(e) Any **two** from:
amend address field / how address is stored [1]
separate into individual headings/attributes [1]
e.g. housenum/street/town [1] [2]

(f)

SQL stands for	Tick (✓)
Statement Query Language	
Structured Query Listing	
Structured Query Language	✓
Statement Query Listing	

[1]

(g) SELECT____ProductID, Description_____ [1]
_FROM ProductTBL_____[1]
WHERE___NumInStock [1] <=100 / or <101 [1] _____ [4]

(h) Complete the table below by stating whether each statement about the report is TRUE or FALSE.

Statement	TRUE/FALSE
The information in the report is grouped by RunnerID and then ordered by Quantity purchased	FALSE
The Information in the report contains data from all of the tables in the database	TRUE
The Quantity and SellingPrice fields are used to calculate the data in the ItemTotal column	TRUE
The field headings in the report have been inserted using field headings from the data tables	TRUE
The field headings must be added to a report header if they are to be repeated on each page	FALSE

[5]

8 (a)

Description	Test type
A version of the application is given to some customers to test	Beta
All staff images load correctly on the home page	System
Test scripted elements used for validation on a booking form	White Box
Total orders are displayed in currency format	Black Box
A version of the application is given to some employees to test	Alpha
Hyperlinks should take users to the correct vet's websites	System

[6]

(b) (i) Any **two** from:
two versions of software [1]
compared [1]
Audience feedback/statistical analysis/select preferred [1] [2]

(ii) Advantage: Able to test alternative designs/real user feedback/ make sure requirements met/helps make improvements/changes [1]
Disadvantage: Additional development time/costly/ doesn't help identify problems with useability [1]
[0] marks for allows them to select most popular design [2]

(c) Click on button [1] test that it opens correct web page [1] [2]

AVAILABLE MARKS

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9 **(a) (i)** User requirements:
Any **two** from:
Compare completed system[1]
To user requirements/needs [1]
To ensure all requirements needs are met/ remind developer of requirement / to ensure they know what the system needs to do [1]
Used as a check list [1]
To ensure correct requirements are used / go through requirements   [2]

(ii) Design documents:
Any **two** from:
Compare final product / show how final product differs/changed [1]
To original design/user requirements [1]
To make sure all requirements met / to help ensure application is complete/accurate/correct [1]
To ensure the design of the application is acceptable [1]
To ensure the application will run as expected / planned [1]   [2]

(b)

Statement	TRUE/FALSE
Evaluation is only carried out at the end of the development process	FALSE
Evaluation can help ensure all user requirements are met	TRUE
Evaluation can be used to help get feedback from the end user	TRUE

[3]   7

Total   **120**