General Certificate of Secondary Education 2024

Digital Technology

Unit 2:

Digital Authoring Concepts

[GDG21]

THURSDAY 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.

1 (a) B   Creates a table with three columns [1]

(b) D   <i><u>This is my text</i></u> [1]

(c) C
                List item 1
                List item 2
                List item 3
             [1]

(d) D   <p style= "color: red;"> Here is my paragraph</p> [1]   4

2 (a)

Statement	Tick (✓)
Users can customise characters to personalise their gaming experience	✓
Users need digital devices with large RAM specifications to play the games	
Reliable broadband communications are needed to support high speed interactions	
Feedback is ongoing and can make the game more interesting for the user	✓

[2]

(b) Any **one** from:
[1] for disadvantage [1] for description
Easily open to abuse/examples of abuse [1], e.g. cyber bullying [1]
e.g. can use high volumes of data [1] high cost of upload/download [1]
e.g. site may retain rights to content posted [1] so can be used without their permission [1]
e.g. may need additional plugins to run all features of application [1]
e.g. takes up storage on device/makes it difficult to run [1]
e.g. location tracking [1] privacy/safety issues [1]
e.g. may share something accidentally [1] cannot remove/edit/delete [1]
e.g. high bandwidth needed [1] issues with buffering/lagging [1] [2]

(c)

Statement	Tick (✓)
A partially completed version of a computer application which can be developed further using feedback from the user	✓
A version of an application used to help discuss user requirements with an end user	✓
A completed version of an application that is tested before being released to the user	
A new version of an application released to users to help improve security	

[2]   6

3 **(a)** Customers (buying products) [1]

(b)

Tool	Task to be completed
E	Show how tables in the database will be linked together
C	Show the sequence of scenes in a movie
D	Describe the fields used in a database
B	Show the layout of various screens in an application
A	Show how the pages in the website will be linked together

[5]

(c) Instructions can be spoken into a **microphone** [1] or entered using a

keyboard [1]

key words [1] are looked up in a **dictionary** [1]. When the correct

word is located a **program** [1] which carries out the correct set of instructions

will be executed by the processor. [5]

(d) Any **two** from:
- Distortion, e.g. background noise/colds [1]
- Lot of time needed to 'train' system to recognise user's voice/accents [1]
- Only limited number of voice patterns can be stored/limited by storage available on hardware [1]
- High demands on processing power/RAM, etc. [1]
- May only recognise limited commands [1]
- Instructions can sometimes be ambiguous [1] [2]

[0] for expensive

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

Level 1 ([1]–[2])
The candidate references the term WIMP but with little elaboration [1] or WIMP + description of any WIMP item = [2]
The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited. There is little use of specialist terms.

Level 2 ([3]–[4])
The candidate briefly describes two [3] or three [4] of the key features of a GUI. 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. There is some use of specialist terms.

Level 3 ([5]–[6])
The candidate fully describes three [5] or four [6] of the key features of a GUI and there is some indication as to how they are used to make interaction easier for non-technical users. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is always clear. The candidate demonstrates good form and style appropriate to the question. The organisation of the answer is good. There is good use of specialist terms.

Answers may include reference to:
- Windows – separate areas on a screen / one area for different tasks or programs / allows user to switch between different tasks/web page easily
- Icon – short cuts on screen / user can click on to access program or task / use familiar images to ensure they are easy to understand/ memorable image
- Menu – list of related tasks / user can click on top level option / access similar tasks / as all options are grouped user can easily find the task they wish to carry out / similar menu structures are employed across many applications/provides easy navigation
- Pointer – a graphic that represents the location of a device such as a mouse / used to select items on menus/icons/windows/onscreen
- Reference to shortcuts providing aid to inexperienced users
  But [0] for experienced users can add short cuts   [6]

(f)

Statement	TRUE or FALSE
Many mobile phones use natural language interfaces to allow users to enter instructions	TRUE
Most search engines use natural language interfaces to allow users to carry out searches	TRUE

[2]

4 (a) (i) PassengerID / FlightNum [1]

(ii) FlightNum [1]

(iii) one-to-many [1]

(b) (i) Any **two** from:
reliability [1] accuracy [1] consistency [1] correctness [1] of data stored (in a database) [1]   [2]

(ii) Data is repeated/duplicated [1] unnecessarily [1] (must mention unnecessary for second mark)   [2]

(c)

Criteria	Tick (✓)
Between 1/5/24 OR 30/5/24	
>30/4/24 AND <1/6/24	✓
>=1/5/24 AND >31/5/24	

[1]

(d) (i)

	Date	DepartureTime	Destination
Criteria			Milan/Destination= Milan [1]
Show	Yes	Yes	No [1]

[2]

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(ii)

	FlightNum	Date	DepartureTime	Destination	GateNumber
Criteria		1 May 2024 or 1/5/2024 or Date = 1/5/2024 [1]			1/GateNumber = 1 [1]

(e) Structured Query Language [1]

(f) SELECT <u>Title, Initial, Surname</u> [1]
[0] if additional fields included in SELECT statement

FROM PassengerFlightTable

WHERE **<u>FlightNum = PR-9875</u>** AND **<u>CheckedIn? = FALSE/NO/N</u>**
        [1]   [1]   [1]   [1]   [1]   [1]   [7]

(g) Write a letter using a word processing document. Link the word processed document with the correct **<u>database</u>** [1]. Select the **<u>recipients</u>** [1]. Use the mail merge tool to **<u>insert</u>** [1] field headings into the correct location in the letter. Test that the mail merge has worked correctly by using **<u>preview</u>** [1] before completing the mail merge. [4]

(h)

Task	Tool
Allows users to input data into a database table	Form
Allows users to display the results of a database query	Report
Allows users to quickly carry out repetitive tasks	**Macro**

[2]

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5 (a) (i) Reduces file size [1]

(ii) Reduces amount of data needed to store image / less pixels/removes some details [1] so can reduce image quality [1]
will reduce quality if lossy [1] will not impact upon quality if lossless [1] [2]

(iii) Reduces upload time [1]

(b) (MyMovie.mp4)   MyImage.bmp   (MyImage.png)   MySound.wav   [2]

(c) Any **two** from:
- Facilitates additional functionality/helps perform a task / do a task it could not do previously
- Suitable examples, flash animation/calendars
- Provide plugins to ensure all elements of application run on all target platforms [2]

(d) Portable Document Format [1]

(e) Any **three** from:
- If it works well on one platform, this does not by default mean it will work well on other target platforms
- Different versions of application for each platform
- Provide regular updates / update your app as the platform updates
- Test the app on all target platforms
- Optimise content / example of optimised content (such as a compression)
- Provide plugins
- Develop programs / applications using HTML [3]

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6 (a) Any **three** from:
- Text
- Images
- Video
- Animation
- Sound

Not buttons [3]

(b) Adding links / something they click on [1] to bring user to another location / resource / webpage [1]

Hypertext: used to add hyperlinks [1] to text items that appear on screen [1] [2]

Scripting: additional code / javascript [1] – used to create customised user experience / additional functionality / used to help validate data on an input form / add interactive features / rollovers / popups / used to provide accessibility elements [1] [2]

(c) When lines of code can be executed over and over again, based on a condition, this is an example of **repetition** [1]. When only some lines of code need to be run when a condition is met, this is known as **selection** [1]. When lines of code run one after the other in the order they are presented in the script, this is known as **sequencing** [1]. [3]

10

7 (a) (i)

Statement	True (✓)
HTML tags are used to add content to HTML documents	✓
HTML tags cannot be used to apply style to text in HTML documents	

[1]

(ii) Any **two** from:
- User does not have to be familiar with HTML / speeds up development [1]
- no errors in HTML [1]
- content moved around then HTML auto updates [1]

[0] for templates [2]

(b)

Letter	HTML tag purpose
F	**Creates a new paragraph**
E	Adds content to the part of the document displayed in the browser window
C	Creates the largest heading displayed in the browser window
A	Creates a hyperlink
B	Contains text that is displayed in the browser tab
D	Adds a graphic to the document displayed in the browser window

[5]

(c) Any **two** from:
improved organisation of assets [1]
easy to locate assets [1]
easier to maintain [1]

[2]

10

8 (a)

Test description	Type of test data used
Enter an appointment time of 4pm	Invalid
Enter 'check-up' as an appointment type	Valid
Enter an appointment time of 9am	Extreme
Enter an appointment time of 11am	Valid
Leave the dentist name field blank	Null
Enter '1' as the patient's initial	Invalid

[6]

(b) (i) Load the web page / open the web page [1]
Check the image loads / displays / appears correctly / how long the image takes to load [1]

[2]

(ii) Click on the navigation button [1]
Check that it takes the user to the correct destination [1]

[2]

(c) (i) Leave name field blank / enter time before 9am [1]
Ensure error message displayed [1]

[2]

(ii) Any **two** from:
• Test the actual script / test internal code [1]
• Carried out by someone who is familiar with the code [1]
• Tests the logic of the program [1]

[2]

(d) Any **two** from:
• (Users presented with) two versions of a program / application [1]
• Provides feedback from the end user / comparison takes place [1]
• Helps you ensure user is provided with preferred solution / better acceptance rate [1]

[2]

(e) Any **two** from:
- Alpha testing is carried out by the organisation / development team [1] beta testing is carried out by end users [1]
- Alpha testing using black and white box testing [1] beta testing only uses black box testing [1]
- Alpha testing is carried out before beta testing or Beta is after alpha [1]
- Alpha testing simulates real world (in a controlled environment) [1]
- Beta testing is carried out before general release [1]

Must make one comment about Alpha testing [1] and one comment relating to Beta testing [1] [2]

9 (a)

Statement about evaluation	TRUE or FALSE
The evaluation helps the developer gain feedback from the end user during the development process	TRUE
Design documents are involved in the evaluation process	TRUE
Testing evidence is not used during evaluation	FALSE
The user requirements play an important role in evaluation	TRUE
The programmer is not involved in the evaluation process	FALSE

[5]

(b) Any **three** from:
- Solution is delivered on time [1]
- No down time when the system is running / smooth operation of system / loading times [1]
- Low maintenance / running costs [1]
- Reliable outputs [1]
- No errors in output [1]
- User satisfied with project outcomes / requirements met [1] [3]

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Definition	Terms
A development process where functionality is continuously added to an application until it is eventually completed	iterative
A process where user input to an application will decide how the application behaves	event driven
Features added to an application to help meet users' individual needs when interacting with the application	accessibility
Used to retrieve only those data items in an application that match specified criteria	selection
The HTML tag used to add a blank line between sections of text displayed in a browser window	

[5]

AVAILABLE MARKS

18

8

5

Total 120