General Certificate of Secondary Education
2019

Digital Technology

Unit 2:

Digital Authoring Concepts

[GDG21]

THURSDAY 16 MAY, AFTERNOON

MARK
SCHEME

1 (a) B A table listing the field headings used in the database [1]

(b) C avi, mp4, fla, mov [1]

(c) C The field names in a word processed document which show where data is to be inserted [1]

(d) B A single person, object or transaction represented in a database [1]

(e) B A small program used to automate repetitive tasks in an application [1]

(f) C A predefined layout of a document which can be edited [1]

(g) A   [1]

(h) D holds details of additional styles used in the document [1]

(i) D Entity Relationship Diagram [1] 9

2 **(a)** Data is repeated/duplicated **unnecessarily** (must mention unnecessary) e.g. Bill Walker/Jamie Duddy Name, Tel No and Mobile No are being entered repeatedly

[1] for definition [1] for example [2]

(b) **(i)** The accuracy/consistency/correctness of data stored in a database [1]

(ii) Jamie Duddy / James Duddy [1]

(c)

Criteria	Tick (✓)
<=7/5/2019 and >=11/5/2019	
7/5/2019 and 11/5/2019	
>=7/5/2019 and <=11/5/2019	✓

[1]

(d) SQL Structured Query Language [1]

(e) SELECT *
FROM **TBLAppointments** [1]
WHERE **StylistName** [1] ="Bart"; [2]

(f) VAT + SUM
[1] for correct fields [1] for '+'
Accept description e.g SUM + VAT
grand total + VAT [2]

10

3 **(a)** Advantages

Answers may include
- User can see at early stage how the system will function
- Enables the end user to provide feedback
- Misunderstandings between End user and Developer are reduced
- Keeps development costs down
- Allows involvement throughout the process
- Early detection of errors/required modifications
- Users needs more likely to be met   [4]

(b) Involved at all stages/after each refinement [1]
Provide feedback [1]   [2]   6

4 (a) (i) Black Box Testing

Any **two** from:
- Design or structure being tested is unknown by the person conducting the test
- Tester approaches the system as a black box which they cannot see into
- Identify errors relating to the interface/or how it operates [1]
- Test for missing/incorrect functions/data structures/tests functionality
- Focuses on inputs/outputs

(2 × [1]) [2]

(ii) White Box Testing

Any **two** from:
- Testing team allowed to see the underlying code/structure/logic of the application
- Tester needs to have a detailed knowledge of the development/code
- Specific inputs are selected to ensure the appropriate output is produced
- Tested using a process called dry run
- Trace tables used to examine any variable

(2 × [1]) [2]

(b) (i)

Test number	Item to be tested	Reason for test	Test data	Expected outcome
1	Duration field	Valid data	**(e.g. 01:00)** [1] < = 4:00	Value should be accepted
2	Duration field	Invalid data	**(e.g. Five Hours) > 4:00** [1]	Value should not be accepted
3	Duration field	Null data	**(Field left blank by user/no data entered)/press enter** [1]	The user will be prompted to enter a duration for the appointment

[3]

(ii)

Statement	Tick (✓)
System testing is carried out as the individual components are being developed.	
System testing is carried out when all the individual components have been developed.	✓

[1]

AVAILABLE MARKS

(c) (i)

Statement	Tick (✓)
Carried out using free-trial versions of the application	✓
Is the final stage in testing the application	
Simulate the real world environment the application is to be used in	
Is carried out by the end user	✓

[2]

(ii) Two versions [1]
Success of use evaluated/compared/feedback analysed [1]   [2]

5 (a) (i) Any **two** from:
Check that image gallery loads [1] and then animates/plays automatically [1] allows users to navigate back and forth through images at own pace [1] checks the images play (in correct order) [1]   [2]

(ii) **Click** on link [1] test it takes you to correct site/website/webpage [1]   [2]

(b) Any **two** from:
• Image not in correct folder
• Image type not supported/wrong format
• Image name not correct
• Image has been deleted
(2 × [1])   [2]

(c) Include in body of HTML/code [1]
Call the scripted element from outside the page [1]   [2]

(d) Any **two** from:
• Shopping baskets
• Product reviews/rating
• Watch lists/tracking/wishlist
• Alert systems
• Sharing product information
• Image display tools, e.g. zoom, enlarge, 3D Rotation
• Help systems/dispute resolution systems
(2 × [1])   [2]

AVAILABLE MARKS

12

10

6 **(a)** Inexperienced user
Intuitive/user friendly/icons use symbols familiar to end user
Accept window/icon/menu/pointer [1]

Experienced user
Provision of shortcuts [1]

(b) Text instructions/typed instructions [1]
Spoken instructions [1] [2]

(c) Advantages

Any **two** from:
- Suitable for users with limited technical knowledge/user does not have to remember complex instructions/instructions can be issued using general vocabulary/easy to learn or operate/little training required
- Suitable for user with limited movement/visual impairment
- Supports hands free input/allows input when completing another task using hands, e.g. driving
(2 × [1]) [2]

Disadvantages

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

(d) Any **two** from:
- If damage occurs interaction is affected/easily damaged
- Screens are small and short cuts can be difficult to see/select
- Small screen size may limit number of options which can be presented
- Relatively expensive technology
- Difficult to operate for visually impaired
(2 × [1]) [2]

(e) Motion tracking interfaces convert **movement** [1] into **digital signals**. [1]
Some applications have motion tracking systems built into their interfaces. No markers or **sensors** [1] are required. These systems use **infrared** [1] cameras to detect movement. [4]

(f) Any **two** from:
- Makes the gaming experience more realistic/can use previously acquired skills
- Provides natural means of interaction for inexperienced users/ease of use
- Can be used by individuals with problems with fine motor control
(2 × [1]) [2]

(g) Any **two** from:
- Use of narrators
- Onscreen magnifier
- Change screen settings/sound settings
- Change keyboard/mouse settings/touch pad settings
- Voice recognition
(2 × [1]) [2]

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

Level 1 ([1]–[2])
The candidate refers to one [1], or two [2] of the compatibility aids.
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 two [4] of the compatibility aids with limited reference to how they can improve cross-platform compatibility. 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 both compatibility aids and how they can improve cross-platform compatibility. 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:
Plug-in
Facilitates additional functionality
Suitable examples, flash animation/calendars
Refer to need to provide link to download for users
Provide plugins to ensure all elements of application run on all target platforms
PDF
Documents stored as pdf can be read on range of platforms
Provides copy of document that cannot be easily edited
Compressed file format so aids electronic transfer/download
Should provide link to appropriate plugin
Ensures documents reach wider target audience   [6]   24

7 **(a)** **(i)** Any **two** from:
- Sound
- Score/statistics/progress
- Onscreen movement/message/visual change
- Leaderboard
- Vibration

(2 × [1]) [2]

(ii) Any **two** from:
- Makes game more realistic for end user
- Captures interest/more enoyable/immersive

(2 × [1]) [2]

(iii) Any **two** from:
- Increased demand on storage
- High dependency on telecommunication links if games are being streamed
- Complex code to support implementation – leads to increased cost
- Increased demands on processor technology/RAM/sound cards/ graphics cards
- May require specialised input devices
- Sensory overload
- Increased loading time

(2 × [1]) [2]

(b) (Demographic) group application is aimed at [1] 7

8   **(a)** Any **two** from:
- Allows for posting of comments at any time
- Can post multimedia content/links and share with others
- Have chat facility
- Ability to provide graphic feedback e.g. like buttons or emojis (call to action)
- Ability to upload range of media content
- Free web space
- Live streaming

(2 × [1])   [2]

(b) Any **two** from:
- Can be intrusive/constant notifications
- Easily open to abuse/examples of abuse
- Can use high volumes of data/cost of download
- Site may retain rights to content posted
- Can lead to social isolation/lack of real-life interaction
- May need additional plugins to run all features of application
- Location tracking
- May not want to share all information

(2 × [1])   [2]   4

9 **(a)** Creates hyperlink [1]
used to provide links to other content/move from one page to another [1] [2]

(b) Resources can easily be located [1]

(c) Any **three** from:
- Automatically produces code
- Provides templates
- Graphical/intuitive interface/suitable for novice users
- Automatically updates links [1]
- WYSIWYG
(3 × [1]) [3]

10 **(a)** Any **two** from:
- easy to understand/most developers familiar with it
- supported by all browsers
- No additional software needed to develop application/free [1]
- Can easily edit the source
(2 × [1]) [2]

(b) **(i)** Provides viewer with additional info about page/displays title in browser tab [1]

(ii) (provides an) ordered list [1]

(iii) (inserts a) paragraph [1] [3]

(c) **(i)**

Statement	TRUE/FALSE
The web page contains a table with 2 rows and 5 columns	FALSE
The table will fill the full width of the browser window it is displayed in	TRUE
The heading "Facts about Penguins" is displayed in the largest heading style	TRUE
The website contains an ordered list with 5 items	FALSE

[4]

(ii) It will create a line break/new line taken (in browser window after species) [1]

(iii) The word "penguin" will appear over the image [1]

(iv) There was no opening <html> tag [1]

(d)

Statement	Statement Type
WHILE	Repetition
ELSE...IF	Selection
FOR	Repetition

[3]

AVAILABLE MARKS

6

15

11 (a) Any **two** from:
To gain feedback from the end user during development [1]/following development.
To check user requirements met [1]/is the solution complete [1]
To improve the product being developed [1] [2]

(b) Any **two** from:
- Client [1]
- End user [1]
- Developer [1]/development team/programmer

(2 × [1]) [2]

(c) (i) Any **two** from:
Completed system compared to user requirements [1]
to ensure all requirements met [1]
Used as a check list [1]

(ii) Any **two** from:
Provides evidence of how system performs or works [1]
Provides evidence of changes or improvements made [1]
Provides evidence that the system meets or does not meet the user requirements [1]

(iii) Compare the finished product to the original plans (e.g. storyboards) [1]
to ensure all met before development starts [1] [6]

10

12

Definition	Term
A symbol on screen which tracks actions made by a user with an input device	Pointer
Area on screen showing actions being carried out by an application	Window
Removal of unnecessary data to support file optimisation	Compression
A type of database query where the end user inputs the search criteria each time the query is run	Parameter
A field in one table which refers to the key field in another table	Foreign key
On screen image used to represent a shortcut to a tool or application	Icon
A series of images which play one after another to create the impression of movement	Animation

[7]

7

Total   **120**