Rewarding Learning

General Certificate of Secondary Education

Digital Technology
Unit 1:
(Compulsory Core)

Digital Technology

[GDG11]

Assessment

MARK
SCHEME

1 **(a)** C   [1]

(b) B   [1]

(c) D   [1]   3

2 **(a)**

Statement	True/False
A relational database is made up of only one table.	False [1]
A table consist of one or more records.	True [1]
A field contains multiple items of data about a person or thing.	False [1]
A key field uniquely identifies records in a table.	True [1]

[4]

(b) 1: Many or many to one   [1]

(c) **(i)**

Item	Data Type
RegistrationNo	Alphanumeric/Text String [1] Character No marks.
YearProduced	Numeric/Integer [1]

[2]

(ii) RegistrationNo   [1]

(d) (Country=)Japan   [1]
Advice to marker "Japan" should be entered in the Country column.

(e) Comma Separated Value/Variable   [1]

(f) **(i)** Query [1]

(ii) grouped by YearProduced/Year [1]   [2]
Advice to marker, the "field name" must be mentioned.

(g) Presence check
Describe [1]
To check that data has been entered into a field [1]
Example [1]
To ensure RegistrationNo is entered [1]/To ensure the Country Code is entered [1]. Advice to marker, any "field name" acceptable.   [2]
Range check
Describe [1]
To ensure data entered is between an upper and lower limit [1]
Example [1]
On the Year produced field >1990<2021 [1]/On price field eg >10,000.00 <50,000.00 [1]   [2]   16
Accept a written explanation, e.g Price between twelve thousand and fifty thousand.
Advice to marker, only "YearProduced and Price" are acceptable.
The word "Range" should not be used in the description.
Any suitable "Year and Price" value are acceptable.

3 **(a)**

Feature	Tick Correct Answer (✓)
Merge Text	
Wrap Text	✓ [1]
Shrink To Fit	

[1]

Advice to marker, if candidate adds more than one tick, no marks awarded.

(b) =AVERAGE(E6:H6) or (E6 + F6 + G6 + H6) /4 SUM(E6:H6)/4
equal sign not required in student response. [1]

(c) replication can save time by dragging the formula down/the spreadsheet will automatically change all row numbers to match the row that is being used. [1]
Do not award, "Saves time" on its own e.g. saves time because you don't have to enter a formula in every cell. [1]

(d)

Terminology	Tick (✓)
Absolute currency referencing	
Absolute cell referencing	✓ [1]
Absolute column referencing	

[1]

Advice to marker, if candidate adds more than one tick, no marks awarded.

(e) Any **two** from:
A predesigned spreadsheet/document/layout [1]
can be reused/used/edited/documents with the same formatting and formulas [1] [2]

(f) Validation [1]

(g) **(i)**

Formula	Tick (✓)
=IF(B23=75, "DISTINCTION", IF(B23=60, "COMMENDATION", IF(B23=40, "PASS", "FAIL")))	
=IF(B23>=75, "DISTINCTION", IF(B23>=60, "COMMENDATION", IF(B23>=40, "PASS", "FAIL")))	✓ [1]
=IF(B23<=75, "DISTINCTION", IF(B23<=60, "COMMENDATION", IF(B23<=40, "PASS", "FAIL")))	

[1]

Advice to marker, if candidate adds more than one tick, no marks awarded.

(ii) Max [1]

(h) D6:D10 [1]
I6:I10 [1] [2]

(i) Macro/Hyperlink [1]

12

4 (a) 8 bits [1]

(b) Nibble [1]

(c)

Data	Data Type
22/05/19	DATE/TIME
24, 125, -23	INTEGER [1]
A, £, @	CHARACTER [1]
Main Street	STRING [1]
1.34, 6.2	REAL [1]

[4]

5 (a) Central Processing Unit [1]

(b) Any **two** from:
Memory Address Register
Memory Data Register
Instruction (Address) Register/Current Instruction register
Program Counter (Accept Accumulator) [2]

(c)

Instructions per second	Tick (✓)
4 billion [1]	✓
4 million	

[1]

Advice to marker, if candidate adds more than one tick,
no marks awarded.

(d) Any **two** from:
The operating frequency of the CPU/determines how fast the CPU can
process instructions [1].
The faster the Clock speed/the more instructions can be processed [1]. [2]

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

Level 1 ([1])
The candidate refers to one or two [1] of switch or router in the correct context.
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 ([2]–[3])
The candidate describes how one [2] or two [3] of switch and/or router are
used in the correct context. 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 ([4])
The candidate fully describes how both of switch and router are used in the
correct context. 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.

AVAILABLE MARKS	
	6
	6

Answer could include any of the following. Not all are required.

1. A switch
   Organises communication between file server and the computer
   Allows two computers connected to a switch to send data to each other
   Operates within a single network
   Forwards a packet of data/message to its destination
   Join sections of a LAN together

2. A Router
   Joins two or more networks together.
   Forwards packets of data from one network to another
   Works out the best route for data to travel.
   Scans the packet of data/message to check if its destination is in current
   network or another network [4]

4

7 **(a)** Any **two** from:
high quality print [1]
high speed printing [1]
reference to efficiency in terms of cost for high volume printing [1]
uses toner [1] [2]

(b) Any **two** from:
no moving parts [1] therefore quicker data retrieval [1] more resilient
against damage [1] consumes less power [1] or one of above with
suitable elaboration. [2] [2]

4

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

Level 1 ([1]–[2])
The candidate refers to one [1] or two [2] ways in which social media
can be misused in the correct context. 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 describes one [3] or two [4] ways in which social media
can be misused. 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 two ways in which social media can be
misused. 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.

Answer could include:
Identity fraud/stealing other people's identity
Addiction to social media
Fake news
Bullying/Cyberbullying
Reference to a variety of cyber crime, e.g. stalking/searching profile pages [6]

(b) Volume [1]
Velocity [1]
Variety [1] [3]

9

9 (a) Hyper Text Transfer Protocol Secure [1]

(b) Any **two** from
A set of rules [1] that permit two computers to communicate across a
network. [1]
Allows hardware devices made by different manufacturers to
communicate. [1] [2]

(c) Any **two** from:
At least 8 characters long [1]
Mixture of numbers, uppercase and lowercase letters and other symbols [1]
Not a real word [1]
Impossible to guess [1]
Relevant example [1] [2]

(d) Any **two** from:
Gains entry to a user's computer 'in disguise' [1]
Tricks the user into opening/downloading a software program [1]
Example of damage, such as deleting data files [1] [2]

7

10 (a) (i) JPEG   MP3   MIDI   AVI   MP4 [3]

(ii) Any **two** from:
Lossless means the picture does not lose any of its original quality
even when compressed. [1] Lossy reduces the file size by removing
data and reduces the quality [1] [2]

(b) Using a computer to commit a crime online/via the Internet [1] suitable
example of Cyber Crime [1] [2]

(c) Any **two** from:
Ensures authorised users have correct access [1] Prevents
unauthorised users from accessing data. [1] Suitable example
e.g. read only/read/write or role related example [1] [2]

(d) (i) Any **two** from:
Personal data should be processed fairly and lawfully with the consent
of the data subject
Personal data should be used for the specified purpose only
Personal data should be adequate and relevant for its intended purpose
Personal data should be accurate and up to date
Personal data should not be kept for longer than necessary
Personal data should be processed in accordance with the rights of the
data subject
Personal data should be held safely and securely
Personal data should not be transferred outside the European Union
without adequate protection [2]
Advice to marker, candidate response should be worded closely to the
principle / must include the words underlined.

(ii) Any **two** from:
Uses special software to encode or 'scramble' data before it is transmitted [1]
The data is unreadable or meaningless if intercepted [1]
Users with the encryption key software can unscramble the data when it arrives at its destination [1]   [2]

(e) Copyright [1] Designs and Patents Act [1]   [2]   15

11

Definition	Term
Software that allows the user to gain information about another person's computer activity.	SPYWARE
Hardware or software designed to protect a network by controlling what data can and cannot enter.	FIREWALL
An intermediate storage area used to hold downloaded segments of a video not yet played.	BUFFER
A copy of data kept in case the original copy is damaged or lost.	BACKUP
Wireless technology used for transmitting data over short distances.	BLUETOOTH
A term used to describe an impact of digital technology on employment	JOB DISPLACEMENT
An attack on a network which involves flooding the network with useless traffic.	DENIAL OF SERVICE
A term used to describe commercial transactions conducted electronically on the Internet.	E-COMMERCE

[8]   8

TOTAL   **90**