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Rewarding Learning

**General Certificate of Secondary Education
2019**

Digital Technology

Unit 1:
(Compulsory Core)
Digital Technology

**[GDG11]
MONDAY 13 MAY, MORNING**

MARK
SCHEME

						AVAILABLE MARKS
1	**(a)**	B	Digital Format	[1]		
	(b)	B	Moving Picture Experts Group	[1]		
	(c)	B	TIFF, PNG, GIF, JPEG	[1]		
	(d)	D	Consumer Contracts Regulations	[1]		
	(e)	D	The Data Protection Act protects the rights of individuals whose data is being stored and ensures their data is accurate and up to date.	[1]		
	(f)	D	Appropriate lighting, anti-glare screens, adjustable brightness on screens	[1]		
	(g)	C	Global Positioning System	[1]		
	(h)	B	Vertical lookup	[1]		
	(i)	C	It can be used to change the formula in a cell if a condition is met	[1]		
	(j)	C	The bit rate is the amount of data, measured in bits, that is processed in a given amount of time	[1]	10	

2	**(a)**	**(i)**	Data is raw facts and figures/no context/meaning [1] e.g. from table [1] Can be a data item or a heading (not both)	[2]		
		(ii)	Any **two** from: Data with context or meaning which has been processed [1] e.g. from table [1]	[2]		
	(b)	**(i)**	4	[1]		
		(ii)	1024	[1]	6	

3 (a)

Definition	Term
A structure where data is organised in rows and columns	TABLE [1]
A collection of data items related to an object or person	RECORD [1]
Designed to hold a single item of data about an object or person	FIELD [1]
Uniquely identifies a record	KEY FIELD [1]

[4]

(b)

Field Name	Datatype
MEMBERID	String
TITLE	String/Text [1]
DATEOFBIRTH	Date/Time [1] or Date [1]
OVEREIGHTEEN	Boolean Yes/No/true/false [1]
JOININGFEE	Currency [1]

[4]

(c) (i) The MemberID contains numbers and letters or characters [1]

(ii) Reference to use of Date of Birth [1]

(d) (i) Returned [1] = False or N [1] [2]
Looking for criteria not the description

(ii) Report [1]

(e) Sort/Sorting [1]

(f) One to Many [1]/1:M [1] [1]

AVAILABLE MARKS

15

4 (a) (i)

Statement	Tick(✓)
The image is a compressed file format	✓ [1]
The image is not a compressed file format	
The image is a vector-based graphic	
The image is a bitmap graphic	✓ [1]
The image uses lossy compression	✓ [1]
The image uses lossless compression	

[3]

(ii) Any **two** from:
(measures) the quality of an image [1]
the number of pixels in an image [1]
pixels per inch [1]
more pixels better quality [1]/higher resolution better quality [1]   [2]

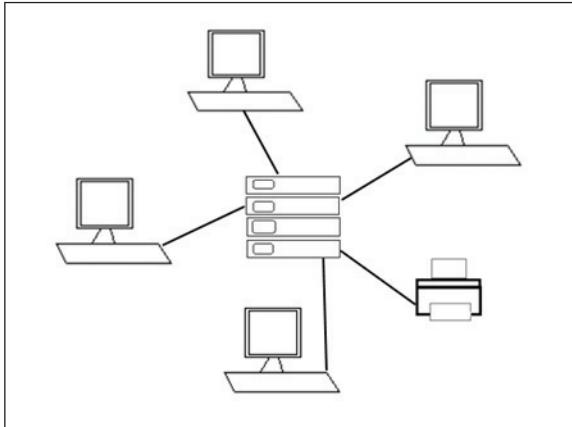**(iii)** dots per inch   [1]

(b)

Definition	Term
Allows the user to watch the video as it downloads.	STREAMING [1]
A part of memory used to store a downloaded video before it is watched.	BUFFER [1]

[2]

(c) A MICROPHONE [1] enables a computer to record sound waves. Sounds from the microphone are recorded in ANALOGUE [1] format   [2]

AVAILABLE MARKS

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5 **(a)** **(i)** 16 GB [1]

(ii) Read Only Memory [1]/reference to non volatility or permanence
Stores the boot up instructions/program [1]/Bios [1] [2]

(iii) Any **one** from:
large storage capacity [1]
do not require software driver [1]
plug and play [1]
faster than traditional hard drive [1]
no moving parts [1] [1]

(b) Disk Defragmenting
Any **two** from:
Large files are often fragmented/disc defragmenter can be used to rearrange data/store files in blocks together/free storage space [1] speeds up time to access data. [1] Maximum of 2

Task Scheduling
Any **two** from:
Timeslicing [1] to get maximum use of processor [1]/creates the appearance of no interruptions [1] Maximum of 2 [4]
Auto run tasks (set up tasks for a given time) [1] + valid example [1], e.g. backup schedule, virus check schedule + update scheduling

(c) **(i)** Arithmetic (and) Logic Unit [1]

(ii) Any **two** from:
Manages the execution of instructions [1]
Decide which instruction to carry out next and fetch it from memory [1]
Decode instructions [1]
Execute or follow the instructions [1]
Fetch/execute cycle [1] [2]

(d)

TERM	STATEMENT
CLOCK SPEED [1]	Indicates the speed at which the CPU can operate measured in gigahertz
PROGRAM COUNTER [1]	Stores the memory location reference (address) of the next instruction to be fetched.
MEMORY DATA REGISTER [1]	Temporarily stores data being transferred to and from memory.

[3]

AVAILABLE MARKS

14

12270.01 **F** 5

6 **(a)** **(i)** Local Area Network [1] A network in one (small) geographical area or building [1]   [2]

(ii) Any **two** from:
Can share software/hardware/data [1]
log on to any machine to access files [1]
Can communicate with other users [1]   [2]

(iii) INTRANET   [1]

(b) **(i)** BUS NETWORK   [1]

(ii) If the backbone/main cable breaks all communication breaks down   [1]

(iii) Any **one** from:
Stop the signal returning/bouncing back down the backbone cable [1]/
absorbs data
Prevents data collisions/bottlenecks [1]   [1]

(c) All the data passes from one workstation to another   [1]

(d) **(i)**

1. **WORKSTATION**

2. **SERVER/SWITCH/ HUB [1]**

3. **PRINTER [1]**

4. **CABLE [1]**

[3]

(ii) Any **two** from:
Increased security [1]
If one machine/cable fails it will not impact on the others [1]
Easily add new machines [1]
High performance/no collisions [1]   [2]
(Response must be specific to a STAR network)

(iii) Any **one** from:
If server fails the network fails [1]
Expensive cabling [1]/install/manage/equipment   [1]   15
(No one word answers)

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

Level 1 ([1])
The candidate mentions one or two benefits to the customer. [1] 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 or the answer is limited. There is little use of specialist terms.

Level 2 ([2]–[3])
The candidate describes one benefit [2] or briefly describes two benefits to the customer in reasonable detail. [3] 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 ([4])
The candidate describes fully two benefits to the customer in detail. [4] 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.

Benefits to include
Cost effectiveness in relation to providing software, e.g. developers can reduce cost
Unlimited storage/ability to save progress
Software updates/maintenance/upgrades/purchases available online
Backup and recovery in relation to responsibility/no need for additional storage devices/data updated automatically at regular intervals.
Greater accessibility/anywhere/any device
The cloud supports complex visual effects/more frames per sec   [4]
Do not accept social media answers/socialising

AVAILABLE MARKS

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8 **(a)** Merged and Centred/Merged/Centred and Bold/Bold [1]

(b)

Formula	Tick (✓)
=C4*D4	
=B4*D4	✓
=A4*D4	

[1]

(c) A cell reference stays the same or does not change [1]
when (formula) is copied [1] [2]

(d) A4:A8 [1] accept A3
E4:E8 [1] accept E3 [2]

(e) **(i)** Pie chart [1]

  (ii) Popularity of each session/the % of the total of weekly sessions for
  each activity/the % sessions per day [1]

(f) Any **two** from:
Predict outcomes for given situations relating to tax [1]
They could use cell F1/the tax rate to calculate tax payable [1]
If the tax rate were to change [1] Impact of the change [1] [2]

10

	AVAILABLE MARKS

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

Level 1 ([1]–[2])
The candidate mentions one [1] or two [2] or briefly describes one advantage of online training. 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 or the answer is limited. There is little use of specialist terms.

Level 2 ([3]–[4])
The candidate describes in detail one advantage [3] or briefly describes two advantages of online training [4]. 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 describes fully two advantages of online training. 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.

Advantages to include
Learning at own time/convenient time
Easy to access training/from any location
Employer can monitor progress
Use of multimedia assets to make training material attractive
Training platforms can be compatible with mobile phones to allow more options for training
Virtual reality
Reduced training costs   [6]

	6
Total	**90**