Exam revision	Unit 4

Key concepts

Binary shift left	
Binary shift right	
Overflow	If the result of an _____ or _____ process results in a number that is too large to fit in the space available then an overflow has occurred.

	Vector images	Bitmap images	Raster images
Made up of		Pixels	
If the dimensions are changed	No loss of quality		
File size			Very large

Meta data

_____ about _____

Examples:

Location

_____ , _____ , _____ , _____

Data types	Examples
1-	1- 1, 44, 457656654
2-	2-
3- Character	3-

Character sets

_____ are represented by a unique binary code

ASCII

Is able to _____ between different programs

UNICODE

(1) Can represent _____ (2) Needs more memory to store

Validation

Validation type: _____

Description: _____

_____

Example: _____

Validation type: _____

Description: Does it have a digit in a particular place

Example:

_____

Validation type: _____

Description: _____

_____

Example: Wales, England, Scotland, Northern Ireland

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	Vector images	Bitmap images	Raster images
Made up of			Pixels
If the dimensions are changed			
File size	Small file size		Very large

Meta data

Examples:

Data types

Data types	Examples
1-	1-
2-	2- 0.214
3-	3-
4- String	4-

Character sets

Characters, symbols and _____ are all made up of _____ binary code

ASCII

_____ interchange _____ programs

UNICODE

(1) _____ (2) Needs more memory to store

Validation

Validation type:

Description:

Example:

Validation type: Lookup

Description:

Example:

Validation type:

Description:

Example:

Validation type:

Description: Has anything been entered?

Validation type:

Description:

Example: JH90A (the A is a check digit)

A partially complete data structure design, for storing customer details, is shown below.

Complete the table, suggesting:

- **Three most** suitable data types
- **Three different** methods of validation. [6]

Field name	Data type	Example data	Validation check
Customer ID		3	
First Name	String	Warren	Presence check
Surname	String	Davies	Presence check
Gender		M	Presence check
Date of birth	Date	28/11/1981	
Address	String	123 Western Avenue	Presence check
Post code	String	CF12 3AB	
Telephone number		029 2026 5137	Length check

(c)   Give **two** examples of metadata stored in sound files.   [2]

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(i) Showing your workings, add 01011101_2 and 00010011_2.   [2]

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(ii) Using an example of binary addition, explain the concept of overflow.   [4]

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Perform arithmetic shifts on the numbers below and state the effect of each of these operations.

(i)   Arithmetic shift left by one place on 01011110_2.   [2]

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(ii)   Arithmetic shift right by two places on 00111100_2.   [2]

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