

Unit 2.6 Data Representation

Lesson 1 - Numbers

MCQS ANSWERS

Question 1: What numeric base does Binary operate on? (1-4)		✓
2		✓
1		
8		
16		
Question 2: How many bits are there in a byte? (1-4)		✓
8		✓
16		
1		
2		
Question 3: What is the maximum number of bits needed to represent 15 in denary? (3-5)		✓
6		
4		✓
Question 4: What is the 8 bit binary representation of 17? (5-7)		✓
00010010		
00010001		✓
00001101		
00100010		
Question 5: What is the binary representation of 32? (5-7)		✓
00100000		✓
00100100		
00110000		
00100001		
Question 6: What is the Denary representation of this 8 bit number? 01001111 (5-7)		✓
59		
79		✓
69		
49		
Question 7: What is the Denary representation of this 8 bit number? 11010101 (5-7)		✓
199		
206		
228		
213		✓

MCQS ANSWERS

Question 8: How Bytes are there in a Terabyte? (5-7)		✓
1024 Kilobytes		
1024 Megabytes		
1024 Gigabytes		✓
Question 9: Why do we use the binary number system in Computing? (4-6)		✓
Because a CPU has two transistors		
To represent the two different states of transistors		✓
To allow the CPU to be in one of two states		
Question 10: What is the hex number 6B in binary? (6-8)		✓
01101011		✓
10101110		
01110111		

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Unit 2.6 Data Representation

Lesson 2 – Characters

MCQS ANSWERS

Question 1: How many bits are used in ASCII? (1-4)		✓
16		
1		
7		✓
8		
Question 2: How many Bytes are used in Unicode? (1-4)		✓
8		
16		
1		
2		✓
Question 3: The ASCII code is represented by using 16 bits. (1-4)		✓
True		
False		✓
Question 4: The ASCII is capable of representing non-European languages. (3-4)		✓
True		
False		✓
Question 5: Upper and lower case letters have a different ASCII code? (3-4)		✓
True		✓
False		
Question 6: What is the maximum number of positive integer values that can be represented in 8-bits? (4-6)		✓
16		
256		✓
65,536		
128		
Question 7: What is the maximum number of positive integer values that can be represented in 7-bits? (4-6)		✓
16		
256		
65,536		
128		✓
Question 8: A character set is... (4-6)		✓
What language can be used in a computer system		
The fonts that a computer has installed.		
The possible characters that can be represented by a computer system.		✓

MCQS ANSWERS

Question 9: ASCII can represent more characters than Unicode? (4-6)		✓
True		
False		✓
Question 10: ASCII Stands for (6-7)		✓
American Standard Code for Information Interchange		✓
American Scientific Code for Information Interchanging		
Absolute Standard Codes for Instruction Interchange		

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Unit 2.6 Data Representation

Lesson 3 – Images

MCQS ANSWERS

Question 1: What do we call the smallest unit of data that can be represented in an image? (1-4)	✓
Pixel	✓
Dot	
Colour	
Bit	
Question 2: What is meant by Colour Depth? (4-6)	✓
Number of pixels in the image	
The number of colours available for each pixel	✓
How pixelated the image is	
Question 3: If you increase the colour depth then the file size will decrease? (4-6)	✓
True	
False	✓
Question 4: How many colours can be represented with a 4 bit colour depth? (7-9)	✓
2	
4	
16	✓
256	
Question 5: What is the term used to define what must be known about a bitmap, for it to be represented accurately? (4-6)	✓
Microdata	
Metadata	✓
Megadata	
Question 6: In modern technology what unit of measurement would be used for screen size? (4-6)	✓
Pixels per inch (PPI)	✓
Dots per inch (DPI)	
Pixels per metre (PPM)	
Question 7: Which of the following is not stored as Metadata about an image? (6-9)	✓
Height	
Colour Depth	
Resolution	
Number of people in the image	✓

MCQS ANSWERS

Question 8: Which of the following is not an image file? (4-6)		✓
PNG		
JPEG		
Bitmap		
MPEG		✓
Question 9: What three colours are used to produce a broad array of colours in a computer system? (1-4)		✓
Green, Red, Orange		
Red, Green, Blue		✓
Yellow, Green, Red		
Question 10: What is the name of the type of graphic that uses shapes of solid colour? (6-8)		✓
Raster		
GIF		
JPEG		
Vector		✓

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Unit 2.6 Data Representation

Lesson 4 – Sound

MCQS ANSWERS

Question 1: What unit is sample rate measured in? (1-4)	✓
Bits per second (bps)	
Hertz (Hz)	✓
Megabits per second (Mbps)	
Question 2: Which of the following is not true if you increase the sample rate? (3-6)	✓
Better quality of recording	
Needs greater storage space	
larger file size	
Decrease in quality	✓
Question 3: What is meant by bit depth? (3-6)	✓
The number of samples taken per second	
The amplitude of each sample	
The number of bits used per second of audio	
The number of bits used to store each sound sample	✓
Question 4: Which of the following is true if you decrease the bit rate? (3-6)	✓
File size increases	
Sound quality increases	
Sound quality decreases	✓
Number of sound samples taken per second increases	
Question 5: What is measured when the wave is sampled? (3-6)	✓
Amplitude	✓
Hertz	
Bit rate	
Frequency	
Question 6: What sample rate is used for CD quality sound? (6-8)	✓
44,100 Hz	✓
88,200 Hz	
22,100 Hz	
Question 7: The purpose of a Digital to Analogue converter is to... (6-8)	✓
convert binary data into analogue form so we can hear it via a speaker	✓
convert sound waves into binary so it can be understood by a computer	
Question 8: What piece of hardware would you use to input sound into a computer? (1-3)	✓
Speaker	
Analogue to digital converter	
Microphone	✓
Digital to analogue converter	

MCQS ANSWERS

Question 9: If you increase the bit depth of an audio file then you increase the quality? (1-4)		✓
True		✓
False		
Question 10: The amplitude of a sound wave is... (6-9)		✓
how high the wave is from the crest or trough		✓
the frequency at which it is sampled		
the speed at which it travels through air		

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Unit 2.6 Data Representation

Lesson 5 - Compression

MCQS ANSWERS

Question 1: What is compression? (1-4)	✓
To convert one file to another	
To reduce the size of data to save space	✓
To minimize the time taken for a file to be downloaded	
To compress something by pressing it very hard	
Question 2: What does Lossy Compression do to files? (4-6)	✓
Increases the file size and keeps the same quality	
Eliminates no information at all	
Decreases the file size and keeps the same quality	
Eliminates unnecessary information in a file to reduce file size	✓
Question 3: What is Lossless Compression? (4-6)	✓
No information is lost but file size is increased	
There is no loss in information at all after compression	✓
Files which have the exact same data after compression	
Compression that involves an algorithm	
Question 4: What type of compression does the ZIP format use? (7-9)	✓
Lossy	
Lossless	✓
Question 5: What type of compression would you use to compress a video? (4-6)	✓
Lossy	✓
Lossless	
Question 6: What type of compression would you use to compress a text file (4-6)	✓
Lossy	
Lossless	✓
Question 7: What type of compression may remove some of the data?	✓
Lossy	✓
Lossless	
Question 8: Which of the following are not in a compressed format? (7-9)	✓
JPEG	
MPEG	
Bitmap	✓
MP3	

MCQS ANSWERS

Question 9: Uncompressed audio and video files require less memory than compressed files. (1-4)		✓
True		
False		✓
Question 10: JPEG Stands for (4-6)		✓
Joint Photo Exempted Grade		
Joint Photographic Experts Group		✓
Junior Photographic Export Group		

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