Chhetri Academy

chhetriacademy.com

GCSE COMPUTER SCIENCE

2.1

Edexcel 1CP2 | Specification point 2.1.2

How computers represent and manipulate unsigned integers and two's complement signed integers

Untiered

Past paper question booklet

1	2020	Untiered
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

7 A computer operates as a binary digital device.

(a) Explain why binary is used to represent computer data.

(2)

(b) 8-bit two's complement is used to represent the denary numbers -8 and -1.

Complete the table to show the binary addition on these two negative numbers.

(2)

-8								
-1								
Result								

(c) Explain why it is **not** possible to apply two's complement to the 8-bit unsigned integer 1111 1101.

(2)

(d) A musician wants to store hundreds of audio files to cloud storage.

She wants to compress the files before she stores them.

Compare using a lossless compression algorithm with using a lossy compression algorithm for this purpose.

(6)

.....

.....

.....

(Total for Question 7 = 12 marks)