



Pearson
Edexcel

Examiners' Report
Principal Examiner Feedback

Summer 2023

Pearson Edexcel GCE
Music Technology (9MT0)
Paper 04

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9MT0/04 Principal Examiner's Report to Centres 2023

Examiners received work with papers scoring just a handful to full marks right through to full marks, so this exam differentiated well across the expected ability range, revealing the candidate's ability level.

Candidates often excelled in some areas more than others; they did not perform uniformly across the whole paper.

For the practical work for this unit, LWT worked well again this year. Usually, work was well labelled and easy for examiners to locate.

Please take care when uploading candidate work. Some centres supplied incorrect submissions such as:

- Not uploading any work at all
- Not uploading work for some candidates
- Uploading the question paper files rather than the candidate's answers
- Uploading work from a mock exam (using past papers) instead of the 2023 exam work
- Including DAW files (please don't include DAW files because these cannot be assessed on this unit)

Some candidates do not provide correct bounces so they could not access all of the marks because the work cannot be fully assessed, most commonly in question 2 not providing a complete bounce. Candidates are advised to listen back to their bounces in their entirety using media player software like QuickTime to ensure they play back as expected. Bounces often include the metronome, or not all of the parts required. Other than for question 5, candidates are advised to bounce the whole track from bar 1 to the end, which facilitates the assessment of the questions and ensures that they have included all of the work they need to.

Examiners find it hard to read some handwriting. Credit cannot be given for answers that are illegible. This isn't limited to "scruffy" handwriting. There are examples of exceptionally neat handwriting, which is illegible, e.g. if the letters are too small, or joined up in a way that the letters cannot be read. If teachers have any doubt at all about legibility of a candidate's handwriting, the candidate should type their answers. Typed answers were much easier for examiners to read and credit. Using a word processor has other advantages of being able to insert sentences etc.

Question 1

This question was intended to be a series of accessible questions to ease the candidates into the exam.

(a) Most candidates answered correctly.

(b) Most candidates answered correctly.

(c) A wide range of marks achieved on this question, with a normal distribution curve. The most common correct lines were the open hi-hat and the snare/clap. The least correct line was the closed hi-hat. There was some leniency with the closed hi-hat because it was masked by the snare, so only the sections where it was clearly audible were assessed.

Question 2

This question assessed the candidate's knowledge of MIDI, sequencing and then synthesis.

(a) This was a simple data retrieving question. Candidates were mostly successful at finding the pitchbend. The mark scheme allowed for different software and edit windows within software.

(b) This was the most difficult mark on the paper. In their allocations, examiners only saw two or three candidates which would have got the mark for the intended answers of "two bytes" or "14 bits". This is

why the mark scheme was expanded to allow more general answers like "more bits" so that more candidates could score if they had a vague understanding of greater bit depth for pitchbend.

(c) This question was mostly well answered. This style of question has been used in recent past papers and highlights the candidates' good preparation for the exam. Some candidates were unsuccessful, e.g. writing out the binary number in reverse, or adding an extra 0 for the 0 unit.

(d) Encouragingly, this year saw a notable reduction in the number of students using presets to recreate the timbre, suggesting that candidates feel more comfortable creating timbres from scratch. The majority of candidates attempted a synth timbre based on the example. The common errors included:

- the whole part an octave too low
- leaving the pitchbend on the default of 2 semitones
- release being too short so the pitchbend couldn't be heard bouncing up and down.

Default pianos were much fewer this year which is encouraging.

Regarding the velocity sensitive filtering, most candidates were able to create some contrast from muffled to bright. The lower ability candidates achieved little or no change, with only the top performing candidates being able to match the velocity sensitive filtering shown in the example. Most common errors were not making the latter half bright enough.

Unfortunately, there were many instances of candidates bouncing only the bars of the given example (bars 33-39). In this case, candidates scored 0 for the question as there was not sufficient work to assess the whole part from. It's vital that candidates submit the whole part and carefully follow the instructions of what should be submitted. Examiners cannot assess work that hasn't been submitted.

(e) There were some good examples which scored full marks. For part (i), most candidates drew a square wave but a very common error was a period of 2ms. For part (ii), a very common error was drawing another square wave, not a saw wave. Very few candidates knew that an octave lower was double the period. Many candidates drew the same wave lower on the graph, i.e. with a negative DC offset.

Question 3

This question started with some effects and synthesis analysis of the bass part. The practical task was a sampling exercise. The question ended with some questions about metering.

(a) Part (i) was very well answered, one of the easiest marks on the paper. For part (ii), most candidates scored 1 with most common incorrect answer of "rate".

(b) Most scored this correctly.

(c) The expected answers were "longer attack" and "higher sustain" but some other answers were accepted as possible. Many answered this well, with a small minority giving all four acceptable answers. The most common incorrect answer was "longer sustain" which demonstrates a lack of understanding of the basic definitions of an ADSR envelope.

(d) Candidates took a variety of different approaches to this question; this is indicative of how the exam is designed so that there are multiple valid ways of coming to the same solution. Some candidates used a sampler, and others copied and pasted the note and used flex-pitch or equivalent. Samplers yielded better results with fewer artifacts.

Most students managed to create a chorus synth that followed the bassline relatively closely, but there were too many candidates who did not attempt changing the pitch of the notes at all, merely repeating the same pitch, and missing out of the marks allocated to correct pitches.

It was relatively common for the volumes of the candidate's part and the original part to be slightly different. Sometimes candidates introduced clicks and glitches to the new part. Some candidates did not accurately emulate the legato nature of the given notes.

Due to the chromatic nature of the bassline, pitch errors were common. Only the top performing candidates were able to match the bass pitches correctly and sample the notes without introducing any timing or volume glitches.

(e)(i) Very few candidates realised the logarithmic nature of the dB scale so answered -18dB.

(e)(ii) Not very commonly answered correctly with mostly either blank or nonsense answers.

(e)(iii) Not very commonly answered correctly with mostly either blank, nonsense answers, or answers about compression. However, there were some good answers. Most common correct marks were "RMS is the average volume" and "RMS metering isn't peak metering".

Question 4

This question was about recording and processing vocals.

(a) Surprisingly very few students correctly answered the response time correctly because the vocal track was quite clearly a very fast response time. However, most candidates identified the correct pitches showing good musical understanding which is pleasing.

(b) On the whole, candidates were successful with this question. The vast majority of candidates were able to copy the vocal syllables correctly without introducing any timing or formant issues. The most common error was one of the two notes being a semitone out – A# instead A or E instead of F, caused by candidates pitch-shifting both words by the same amount, rather than treating the words individually.

(c) Many candidates chose to word process this longer answer question. Many students achieved full marks in this question, almost all started their essay "The chosen polar pattern is omnidirectional, cardioid would be better to avoid capturing the room" which gained half marks in one sentence. Most reached the maximum 4 AO3 marks quite easily by correctly naming the switches with many going on to provide suitable explanations of each.

Question 5

This question had a range of editing, processing and effects-based tasks to cater for a wide range of candidate ability. Question (a) & (b) were targeted at E/D candidates, (c) & (d) were targeted at C grade candidates, (e) & (f) were targeted at high grades for full marks though lower grade candidates could also score some marks, and (g) and (h) were across the whole range.

Candidates should answer the questions and not add other creative panning, dynamic processing, EQ and effects not specified in the question because such extra processing could mask the questions that are being assessed.

(a) This question was the easiest question to answer so the vast majority answered this successfully. However, there were still a few who didn't manage to perform the basic editing task asked of them.

(b) This question was slightly harder than (a), although most candidates seem to be able to perform basic automation mix moves. There were a few who inverted the answer panning from right to left.

(c) Candidates needed to analyse and extrapolate the underlying chorus effect parameters before trying to replicate it for the following audio. The vast majority of candidates actually did a surprisingly good job with very few using incorrect effects from within the modulation/delay family.

(d) This question also required candidates to analyse a given example and replicate it closely. The majority of candidates did this quite well, with very few introducing timing errors or electing to use stereo 'ping pong' delay. One area where most candidates struggled with was making the wet signal quieter than the dry signal; too often the wet signal was the same volume as the dry signal.

(e) This question was targeted at higher grade candidates. The ability to sidechain a gate is a more advanced skill so examiners saw fewer students successfully completed this task. Candidates had to carefully adjust the threshold to isolate the claps and hi-hats but not the riser to ensure the gating occurred in bars 36 and 37. Often, if the threshold was too low, bar 37 wasn't gated. Quite a few candidates struggled with where to bypass the effect causing an extra cut on 37:4. Candidates who were successful at completing the task set the threshold musically.

(f) This was a very challenging question and therefore had even fewer successful candidates. Most either applied a static reverb or simply automated the wet/dry balance. But those with more advanced analytical skills noticed that it was the reverb time that was increasing rather than the wet amount. This question was designed with the most talented students in mind and most who did well with this question scored highly overall.

(g) The stems are deliberately mastered at wildly varying volumes to ensure that the candidate needed to listen (rather than look at fader positions) to earn credit. Most candidates managed to do well in musically balancing the tracks so scored 3 marks. The majority of 2 mark mixes were because the chorus synth was too loud, or the drums too quiet. Candidates failed to recognise the importance of the drums in music of this nature, which after the vocals should be the most important musical element. One pleasing aspect was how many managed to make the lead vocal sit on top of the mix. This was a noticeable improvement from previous exams where many students buried the vocals below other elements to the detriment of the music.

(h) There is an inevitability that most candidates will score highly on this question so long as they manage to render out the audio successfully. There was a smattering of candidates who fell short of this relatively generous question, so the question has merit in terms of differentiation. More importantly, it's a skill that candidates wishing to pursue further study or a career within the audio industries need to be able to do effortlessly on a daily basis. Most common errors were silence of more than a second at the start (caused by starting at the start of bar 1), and parts missing or out of sync.

Question 6

Many candidates chose to word process this longer answer question.

The plug-ins used for the question 6 diagram (and question 4(a)) were taken from a variety of sources and software so candidates aren't advantaged or disadvantaged depending on which DAW they use. Candidates are expected to apply their knowledge to an unfamiliar diagram/picture and extrapolate how it would sound.

This question was designed to differentiate across all of the grades, including A*. This year candidates scored much higher than last year even though the question was similar in that there were three main processors to discuss.

Quite a few candidates structure their response in AO3 and AO4 columns. Students are not good at identifying an AO3 or 4 point themselves. Some seemed to think an AO3 mark is gained by merely re-stating what is already in the picture. Also, in practical terms an answer like this often has a lot of blank space on the left of the page and poorly organised scribbles crammed into the right column, with arrows up and down the page where they are trying to make connections between them. Candidates would be better off not to trouble themselves with AO3 and AO4 and just enjoy showing their knowledge and evaluation.

Some of the better students missed out on their full complement of AO3 points by not providing a definition of a parameter which they clearly knew (threshold, ratio, attack, release etc).

Candidates who divided up the essay into three subheadings, one for each processor, provided the most concise and structured writing.

Most candidates were able to see that the very high ratio would result in a heavily compressed vocal. The function of the make-up gain was often confused and misunderstood.

For the EQ, many candidates realised that boosting the mid and high frequencies would add brightness and clarity thus allowing the vocals to come forward in the mix. Most candidates were also aware of the problems of muddiness and congestion with the bass guitar as a result of boosting the low frequencies. Very few candidates discussed the problems that boosting the low frequencies would have on plosives and proximity effect. Very few candidates realised that all of the frequencies were boosted and that this could cause an issue with the overall volume of the track, possibly causing distortion.

For the delay settings, most candidates were able to identify that the high feedback was inappropriate and would cause too many repeats, but some candidates thought that the feedback setting was related to distortion or heavy metal in general. Very few candidates were able to work out that the delay time was tempo synced at a quaver. Some candidates incorrectly argued that the offset in delay time was a mistake and that changing the times to be identical would improve the stereo image.

Several students wasted time and space by writing lengthy introductions about rock music in general without any creditable content or restating previous points in conclusion paragraphs. Candidates are reminded to keep their responses concise and factual.

The most successful candidates were precise with their use of technical vocabulary, and were able to demonstrate an impressive depth of knowledge, often receiving a lot of credit for a single, well-constructed sentence.