Examiners' Report
Principal Examiner Feedback

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Pearson Edexcel IGCSE
Music Technology (6MT04) Paper 01

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6MT04 Principal Examiner's Report to Centres 2017

All questions reflected a full range of responses. Paper totals commonly ranged from 20 to over 70 reflecting a well-judged assessment. Examiners thought that the paper was fair, revealing clearly the candidate's ability level.

There was a clear distinction between centres that had prepared well using past papers and thoroughly researched music technology theory, and those that seemingly had invested little time on theory and mock examinations. Candidates from the latter centres would not be able to access the higher grades due to insufficient detail in responses, often giving very general answers, or confused answers using technical vocabulary in contradictory sentences. Some centres/candidates were relying solely on the past papers for their exam prep and, as a result of not developing the pupils wider DAW skills, couldn't adapt to variations in questioning, often relying on answers from previous exams that didn't answer this year's questions.

Candidates should be reminded not to give many answers that contradict themselves for the same question, or a string of guesses. Contradicting answers will not be credited in any question. For example, in 1(e) (i) some candidates wrote "flange, high pass filter and distortion"; although distortion is correct there are two wrong answers present too.

This year there was a significant increase in students not providing correct bounces so they could not access all of the marks. Examples include: not soloing the track, leaving the metronome on or effects on for tasks 1 and 2, and most commonly only bouncing one bar of drums or chords.

Good quality DAW software should be used. Centres should not rely on entry-level software because many of the plug-ins and editing functions required for the paper may not be available.

Most centres were well prepared for the examination. However there continue to be similar problems to previous years:
- Some CDs were damaged by the biro used to write the candidate details.
- Some were damaged in the post, so please wrap them carefully.
- Sometimes exams officers did not put the CDs in with the papers, or sent them separately to a different address.
- Please don't put sticky labels on the CDs because they damage the fragile CD drives in laptops with which this paper is marked.

Unusually, this year there were three centres that sent identical CD audio for multiple candidates or muddled up the candidates work and put it onto wrongly named CDs. Teachers/technicians must take care that the work on the CD is the candidate's work.

Computers must not have access to the internet, any other network or previously saved files. Refer to the "Instructions for the Conduct of Examinations" on the Edexcel website. There were instances of where

candidates had inadvertently submitted music from previous exam series proving to Edexcel that their exam computers were not secure.

Question 1

This question was intended to be a series of short answer accessible questions to ease the candidates into the exam. These gradually got harder throughout question 1.

A few students who were clearly good technologists, scoring high throughout the paper, did not have the musical understanding to approach (d) in the same way. Such candidates should be encouraged to use the technology to aid them in answering pitch and rhythm questions.

(a) Most candidates were able to answer this question, and they used the word plosives most often. The most common mistake was a repeat of the question, identifying that a pop shield prevents pops. Students should be reminded that you cannot gain credit for re-phrasing the question.

(b) The majority of candidates could link the use of a cardioid mic in this situation to reducing room ambience or background noise. Common mistake discussed was "spill" which wasn't relevant with this particular vocal recording because there were no other musicians in the room and a cardioid will not prevent headphone spill because it's pointing towards the headphones. Some students didn't answer the question by writing what shape a cardioid polar response is.

(c) Most candidates could link a valve pre-amp to a "warm" or "vintage" sound. Few candidates managed to get the second mark. Only a few could give a more technical description. This question worked well because the majority could get one mark but only the candidates that had a technical understanding could get the second.

(d) This question was a good differentiator, each bar getting progressively harder. Many students were able to identify the rhythm in bars 1 and 2, whereas fewer students were able to notate the rhythm for bars 3 and 4. A common mistake which lost a mark was to incorrectly notate a minim rest as a semibreve rest.

(e) (i) Answered correctly on the whole. (ii) Some students were able to draw the distorted wave, however only the best students made sure that the distortion clipped at the same peak level. The most common errors were not clipping the bottom part of the waveform, or a clipped waveform at different heights. A particularly common incorrect answer was drawing a fuzzy line around the waveform (adding a white noise).

(f) This question asked for an explanation of why the settings had been used rather than a dictionary definition. Most students described what compression does, and this achieved one mark if they specified reducing the dynamic range. Candidates who scored both marks went on to link the given ratio and gain settings to the recording.

Question 2

(a) Most candidates were able to identify the range. Some candidates identified the pitch bend value or the note name, rather than the range. This just shows it's important to read the question.

(b) The most common mistake was that students missed the accidental on the C# or put it after the note. Some students missed the final note completely.

(c) Candidates gained some marks here even if they only had a vague understanding of filter envelopes. A mention of attack was common but many could not go on to describe in more detail. Some candidates went on to identify that the cutoff frequency was controlled by the envelope. Very few identified the filter type as low-pass filter.

(d) Many candidates identified that the release was gradually increasing so scored well. However many students listed all four envelope stages stating that some were getting longer/shorter/higher/lower so these types of contradictory responses could not be credited.

(e) Most candidates correctly recognised resonance. Some confused this with cutoff, though there were occasional other wrong answers such as distortion, phasing or flanging. Although the resonance caused distortion, distortion was not set to maximum (as the question asked) so wasn't credited.

(f) This question was aimed at the top end of the cohort. Many candidates got the mark for attack/release too short. Very few got the second mark for cutting off the waveform, although some described cutting the waveform in detail probably from an understanding of zero crossing/crossfading from audio editing rather than synthesis.

Question 3

(a) This question worked well at differentiating high ability students, testing candidates' ability to edit a new rhythm out of existing audio. Responses to this question tended to have four main outcomes:
- MIDI timbres to recreate the rhythm and this scored a maximum of 1 mark because there was no digital editing to credit.
- The first three beats of the rhythm correct but with clicks present on the edit points. No reverse snare, scoring 3 or 4.
- The first three beats of the rhythm correct without clicks. No reverse snare, scoring 5.
- A good edit including the reversed snare sound, scoring 6, 7 or 8 depending on whether there were errors in the reverse snare sound, the most common being the inclusion of a reversed kick drum too.

(b) A straightforward data finding question which the vast majority of candidates answered correctly. Some candidates identified other data or incorrect values for part (i) and some identified the end of bar 9 for the location for part (ii).

(c) This question differentiated very well across the whole cohort with nearly all candidates scoring some marks. There was a good range of marks, only the top candidates scoring full marks. It demonstrated the importance of listening skills in music technology at this level. Candidates could not rely on presets to score full marks and required an understanding of filter envelopes. Unfortunately a handful of candidates only produced a bass part for bar 9, leaving the rest of the part on piano, rather than all of the way through so no credit could be given.
(i) Most responses were correct. Incorrect responses included wrong octave (usually too high) and monosynths so the chords were just single notes.
(ii) Most candidates scored a mark for some kind of square or similar waveform. Less successful candidates had used preset sounds with effects switched on.
(iii) Very few candidates recognised the 2 octave pitch bend, some opting for one octave but most answers leaving the pitch bend range on the 2 semitone default.
(iv) Most responded correctly. The most common incorrect response was a long release, or a release masked by effects.
(v) The most difficult part was the copying of the filter envelope and the uniqueness of the example given meant that the candidates had to really understand how to operate the synth. Many did not pick up the slow attack from the sample. Of those who did, many used a slow amplitude attack instead of applying this to the low pass filter cut-off. Only the best students managed to score 3 marks by having a resonant low-pass filter with a slow attack with a similar cut-off frequency to the given example.

Question 4

There are two options for question 4, designed to give all candidates with diverse music technology interests a chance to illustrate their expertise for the subject. This question differentiated well across the cohort. For both options, there was a full range of responses ranging from 0 marks where no relevant information had been written, to some excellent responses scoring more than maximum marks. The exhaustive mark scheme gave credit for all relevant knowledge, and further credit for deeper understanding and explanation.

Lengthy, meandering answers with little or repetitive content failed to secure high marks. Many candidates lost marks simply because they were unclear in their responses - this could be due to a lack of knowledge or terminology, or an inability to communicate in a clear and concise manner. Candidates must spell technical terms correctly to gain credit in this question.

A student that had just memorised information without understanding it is not going to score very highly in this question because it is designed to test

higher levels of understanding. To obtain top marks in question 4, an informative use of technical vocabulary applied to an unfamiliar situation is expected.

Some candidates use this question to write about a topic that they have memorised from revision but don't receive credit if it doesn't answer the question. For example in 4(a), I saw a detailed four page essay about plate reverb complete with diagrams. It scored two marks for 'plate reverb'. There was no information about other aspects of vocal editing. The knowledge wasn't applied to the question; it was merely recalled insolation.

Well labelled graphs and diagrams could add significantly to the marks available for both options. Candidates should not feel restricted to prose when a labelled diagram would illustrate the points better. In particular in 4(b), EQ graphs were a welcome sight in essays.

The mixer channel option proved more popular than vocal editing. Whichever option was taken, mark totals were holistically on par with candidates who chose the other topic. Over the years statistical research shows that either option yields the same mark according to candidate ability.

(a) It's important that candidates read the question. This question was in two halves: editing and mixing a vocal using contemporary equipment; and editing a vocal in the 1980s. Candidates who answered both parts of the question could score well. Unfortunately a significant number of candidates only answered the second part of the question, completely ignoring the first part so they missed out on most of the credit. Then unfortunately some of these candidates described the workings of plate reverb or tape recorders which were not what the question was asking.

Among candidates that had read the question carefully, even the poorest candidates could score some marks on this question by listing effects used on a vocal. The more successful candidates were able to describe the process of editing and mixing a lead vocal, referencing editing tools and effects, but the top performers described how these effects could be configured to produce a 'natural sounding' lead vocal, as specified in the question.

Hardly any candidates convincingly described the process of editing a vocal performance using 1980s technology. An overwhelming majority of candidates referred to practices from the 1950s and 60s (most commonly tape splicing and echo chambers). The most common mark given was for realising that fewer tracks were available for takes.

(b) The diagram for this question provides an opportunity for candidates to apply their knowledge to unfamiliar pieces of studio equipment by relating it to their familiar DAW. The layout of the picture resulted in mostly well-organised and clear answers. Some concise answers were less than the full two pages and scored 16. Merely identifying the features would limit credit.

Even the poorest candidates were able to accurately describe some controls on the mixing desk. The most common marks given were in EQ 'cut or boost frequencies', 'high frequencies'; PAN 'left or right'; and 'fader'. Surprisingly, very few candidates were able to identify that the 'sens' dial was a gain control.

Candidates were generally familiar with aux sends, but only the best candidates were able to identify pre-fader and post-fader sends and give suitable examples of their respective uses.

Candidates should be as specific as possible when describing uses for each control. These responses were often too generic to credit (e.g. for high shelf EQ 'to make something brighter', 'pan can be used to move parts left or right'). Candidate examples of uses should include an instrument and its context in the mix.

The most successful candidates were able to name each control, describe it, then gave a specific example of its use leading to full marks.

Question 5

This question had a range of editing, processing and effects-based tasks to cater for a wide range of student ability. Although all questions differentiated across the grade range, they were targeted at different ability levels. The third mark of (a) was aimed at the A* candidates, (b) was targeted at E/D candidates, (c) was targeted at B/C candidates, (d) was targeted at A/B candidates and (e) and (f) 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. Otherwise full credit may not be given because the processing that the question asks for may not be clearly audible.

(a) Most students identified and applied mono crotchet delay with appropriate wet balance and feedback settings, but only the most able students heard the HPF and applied the settings correctly.

(b) It is clear that most candidates have mastered automated panning with headphones worn correctly. However, there is still the odd slip with automation movement heard around or during the task.

(c) There were some centres where no candidates attempted this question, or just did some incorrect EQ showing that some centres aren't properly prepared for the more advanced music technology tasks. Most candidates applied a low-pass filter, but often the filter cutoff did not match the example at the start of the rise limiting credit to two marks. However the best candidates were successful at realising a musical crescendo.

(d) Similarly to (c), there were whole centres that missed this question out. However, this question demonstrated that most students understood how to apply a side chain gate; a significant improvement on previous years when

sidechaining has been assessed. A common error was bypassing the gate at the start of bar 29. Candidates need to understand that bar number ranges are inclusive.

(e) 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. The best candidates that used their ears to balance all four parts achieved full marks. Many students who correctly apply detailed settings in (a)-(d) still forgot about the overall balance of sound in the mix. The most common was drums too quiet or backing chords dominating the vocals. In most popular music styles, the drums and vocals should be the most forward in the mix. There were some mixes with missing parts where no credit was given, or "chords example.wav" left in the mix which limited credit.

(f) An improvement from previous years, this year every candidate cut the tail end of the song. However, a small number still did, or left an unacceptably large silence on the run in. Quite a common error was that candidates did not bring the volume up high enough. Sometimes, the chords were out of sync.