NCFE Level 1 Technical Award in Music Technology (601/6777/4)
NCFE Level 2 Technical Award in Music Technology (601/6774/9)

Paper number: P000451 (Written)

Assessment window: 12 March 2018 – 16 March 2018

Mark Scheme

This mark scheme has been written by the Assessment Writer and refined, alongside the relevant questions, by a panel of subject experts through the external assessment writing process and at standardisation meetings.

The purpose of this mark scheme is to give you:

- examples and criteria of the types of response expected from a learner
- information on how individual marks are to be awarded

Marking guidelines

General guidelines

You must apply the following marking guidelines to all marking undertaken throughout the marking period. This is to ensure fairness to all learners, who must receive the same treatment. You must mark the first learner in exactly the same way as you mark the last.

- The mark scheme must be referred to throughout the marking period and applied consistently. Do not change your approach to marking once you have been standardised.
- Reward learners positively giving credit for what they have shown, rather than what they might have omitted.
- Utilise the whole mark range and always award full marks when the response merits them.
- Be prepared to award zero marks if the learner's response has no creditworthy material.
- Do not credit irrelevant material that does not answer the question, no matter how impressive the response might be.
- The marks awarded for each response should be clearly and legibly recorded in the grid on the front of the question paper.
- If you are in any doubt about the application of the mark scheme, you must consult with a senior Examiner.

Guidelines for using level of response marking grids

Level of response marking grids have been designed to award a learner's response holistically and should follow a best-fit approach. The grids are broken down into levels, with each level having an associated descriptor indicating the performance at that level. You should determine the level before determining the mark.

When determining a level, you should use a bottom up approach. If the response meets all the descriptors in the lowest level, you should move to the next one, and so on, until the response matches the level descriptor. Remember to look at the overall quality of the response and reward learners positively, rather than focussing on small omissions. If the response covers aspects at different levels, you should use a best-fit approach at this stage, and use the available marks within the level to credit the response appropriately.

When determining a mark, your decision should be based on the quality of the response in relation to the descriptors. Standardisation materials, marked by senior Examiners, will help you with determining a mark. You will be able to use exemplar learner responses to compare to a live response, to decide if it is the same, better or worse.

You are reminded that any indicative content provided is there as a guide, and therefore you must credit any other suitable responses a learner may produce. It is not a requirement either, that learners must cover all of the indicative content to be awarded full marks.

Qu	Marking guidance	Total marks

Section 1 **Total for this section: 52 marks**

1	**Which one of the following MIDI editing tools would you use to correct the rhythmic timing of MIDI notes within a Digital Audio Workstation (DAW)?** Answer: B (Quantise)	1

2	**Which one of the following DAW plug-ins would you use to make a sound repeat multiple times?** Answer: A (Delay)	1

3	**You are setting up your audio interface to work on a project.** **Identify one software preference you would need to check when connecting an audio interface to a DAW.** Award one mark for any of the following or any other suitable response up to a maximum of one mark: Audio input/output, Interface / Device / Sound Card selection, Audio input enable, Audio Input monitoring, Audio output routing, Bit Depth/Sample Rate.	1

4	**Most DAWs are now bundled with a library of audio loops and MIDI loops.** **State two advantages of using audio loops or MIDI loops as a starting point, when composing a piece of music using a DAW.** Award one mark for each of the following advantages up to a maximum of two marks: • Saves time to start making ideas • Can gives creative idea for additional parts • Convenient stylistic / sound ideas • Easier to build structure • Easier to build rhythm / gives rhythm / tempo to work on • Can give melodic idea to work on • Can give harmonic idea to work on • Can create parts that you cannot play in / record yourself • Can access instruments / textures that you cannot record yourself • Require minimal editing / no editing to start • More accessible to new users / non musicians Accept any other suitable response.	2

5	**Explain how and why you would connect a controller keyboard to a DAW.** Award one mark for identification and one mark for an explanation. • 1 mark for identifying **USB** or **MIDI** connection • 1 mark for explanation function of controller as **MIDI** input device E.g.: The keyboard is connected via USB (1) so MIDI information can be recorded (1).	**2**

6	**You have decided to create a bass drum sound for a project using a software instrument. You have the choice of using a software synthesiser or a software sampler.** **Evaluate the suitability of both types of instrument for creating a bass drum sound.**	**8**

Level	Marks	Description
3	7 – 8	**Detailed** A wide range of knowledge and understanding of both a software synthesiser and a software sampler is present. Evaluation of each software instrument in regard to a bass drum sound being created is effective. A conclusion is present, supported by relevant judgements and is fully expressed. The learner correctly uses a wide range of technical terms consistently and the answer is clear, coherent and focussed, with a logical structure.
2	4 – 6	**Sound** A range of knowledge and understanding of both a software synthesiser and a software sampler is present. Evaluation of each software instrument in regard to a bass drum sound being created is generally effective. A conclusion may be present, supported by some judgements, but is likely to be inconsistent in parts. The learner correctly uses a range of

			technical terms and the answer is generally clear, coherent and focussed although the structure may lack some logic.
1	1 – 3	**Limited** A limited range of knowledge and understanding of both a software synthesiser and a software sampler is present. Evaluation of each software instrument in regard to a bass drum sound being created is of limited effectiveness or may be absent. A conclusion may be stated, but it is not supported by any judgements and is likely to be irrelevant. The learner refers to some technical terms but the answer may lack clarity, coherence, focus and a logical structure.	
	0	Insufficient evidence for a mark to be awarded.	

Indicative content
Contrast methods of sound creation – (waveform generation / modification v collection / recording / sourcing of audio and editing).

Evaluation of synthesis and sampling, e.g.:

Pros - Synthesis

- Stylistic suitability (e.g. EDM etc)
- Potentially easier to create variations / control tone / envelope through use of controllers / velocity
- Synth controls often ‘hands on’ and easy to experiment with
- Ability to create entirely original sound from scratch
- Variety of synthesis methods available in most DAWS (e.g. subtractive, FM, wavetable) giving many possible sound options
- Limited memory requirement.

Cons – synthesis

- Limited ‘realism’ may not be suitable for some styles
- Requirement for manipulation of settings in detail to provide modelled sound – time consuming
- Not all synthesis methods may yield useful results for bass drum.

Pros – sampling

- Stylistic suitability of recording ‘live’ bass drum (e.g. rock etc.)
- Ability to sample electronic and sources (e.g. sampling kick from drum machine, lifting from recordings / video) to widen

	sound pallete • Can use pre-existing samples and manipulate (e.g. re-pitch, envelope, tone) • Sample packs / audio sources easily available • Can record source to create entirely new audio • Can manipulate 'found sounds' into use as kick (e.g. beatboxing) to create original and interesting sounds • Can layer multiple samples to provide new textures / allow for velocity switching or fades • Can use filtering / ADSR to manipulate material in sampler patch. Cons – Sampling • Potentially time consuming to record • Existing samples may have copyright issues • Detailed audio editing may be required • Recording high quality samples may require • Time consuming to build 'realistic' patches (velocity switching / fades / layering) • Potentially more difficult to patch controllers to add variation • Potentially larger memory / processing requirement. Technical terms related to instrument editing e.g.: • Filtering • Velocity • ADSR • Looping • Audio editing	

7	**Which one of the following effects was often applied to vocals on rock and roll recordings in the 1950s?** Answer: C (Echo)	**1**

8	**Which one of the following file types is the most appropriate for storing music on devices that only have limited memory?** Answer: C (.mp3)	**1**

9	**Which one of the following groups of instruments is typically used in soul music?** Answer: B (Drums, bass guitar, electric guitar, electric piano, horn section)	**1**

10a	**Name one rock and roll artist.** Award one mark for any of the following or any other suitable response up to a maximum of one mark, e.g.: Elvis Presley, Chuck Berry, Little Richard, Bill Haley & His Comets, Jerry Lee Lewis, Bo Diddley, Big Bopper, Buddy Holly, Ritchie Valens.	**1**
10b	**State one typical musical feature of rock and roll.** Award one mark for any of the following or any other suitable response up to a maximum of one mark: • Simple harmony/chord sequences, e.g. 12 bar blues/I-IV-V/Verse-Chorus-Verse structure • Swung rhythm. • Use of solos / improvisation / call and response • Instrumentation: drums / bass / guitar / piano / vocals / sax. • Up-beat feel / tempo. • Use of backbeat. • 4/4 time.	**1**

11	**Multitrack recording was a key development in music technology in the 1950s.** **Explain one advantage of using multitrack recording.** Award one mark for identification of an advantage and one mark for an explanation, e.g.: • All instruments and vocals could be recorded separately (1) so that the sound of each part could be controlled individually / allow for retakes of individual parts / erasure of mistakes without affecting other tracks / edited (1). • Parts could be overdubbed / layered (1) to build up a performance / make more complex music(1). • Multitracking allowed multi-instrumentalists to record multiple parts themselves (1) leading to greater freedom in the studio (1). • Effects / Processing / EQ / plug ins could be applied to individual parts (1), rather than to the whole mix (1). • Can record multiple tracks at the same time (1) allowing separation for later mixing (1). • Multiple takes can be recorded (1) to allow for choice of take at mix stage (1). • Allows for retakes on individual tracks (1) as tracks could be recorded separately (1). • Performance can be built up (1) through overdubbing (1). Accept any other suitable response.	**2**

12a	**On which one of the following devices would you typically find an input gain control?** Answer: C (Mixing console)	**1**
12b	**State one unwanted effect of input gain not being controlled effectively during recording.** Award one mark for any of the following, up to a maximum of 1 mark: • signal level too low • distortion / clipping / peaking • noise / noise floor evident / background noise Accept any other suitable response.	**1**

13	**Which one of the following definitions most accurately describes reverb?** Answer: C (An effect applied to an audio signal to make it sound as if you're now hearing that sound in a different room.)	**1**

14	**You have been asked to reduce the 'rumble' in a recording, using a DAW.** **Name one type of plug-in/device that you could use and state how you would use it to reduce 'rumble' in a recording.** Award one mark for identification of plug-in / device: EQ / equalisation / Filter / Noise Gate / Expander. Award one mark for application of plug-in /device, e.g.: stating how to attenuate problematic frequencies eg rolling off bass / turning down bass / adding high pass filter / removing frequencies below 100Hz / find frequency and attenuate.	**2**

15	**Audio interfaces typically have an XLR audio input connector.** **Explain two reasons for connecting a microphone using the XLR input.** 2 marks available per response, e.g.: • Allows for phantom power (+48v) (1) to power condenser microphones (1). • Allow for use of balanced cables (1) to reduce noise (1). • Allow for use of balanced cables (1) to allow for longer cable runs (1). • XLR input will be matched to mic level / impedance / feature pre-amp (1) ensuring correct signal level (1). Accept any other suitable response.	**4**

16a	**Condenser microphones are often the preferred choice for studio recordings.** **Explain two advantages of using a condenser microphone during a studio recording session.** Maximum of 2 marks per explanation of each advantage. Award one mark for identifying a technical feature and one further mark for logically linked advantage given, e.g.: • Condenser microphones are sensitive (1) which allows more detail / softer sounds to be captured (1). • Condenser microphones have a wider frequency response (1) which allows more detailed recordings to be produced / accurate capture of high frequencies (1). • Condenser microphones have a faster transient response (1) which allows percussive / fast sounds to be captured accurately (1). • Switchable polar pattern (1) increases flexibility when capturing a range sound sources (1). Accept any other suitable response.	**4**

16b	**Microphones with a Cardioid polar pattern are often used to record solo vocalists.** **Explain why this pick up-pattern is used for this purpose** Maximum of 2 marks for each description, e.g.: • The microphone would pick up mainly from the front of the microphone (1) excluding unwanted room sounds or reflections (1). • So the microphone doesn't record any other instruments (1) giving separation / clarity (1). • Microphone will exhibit some proximity effect (1) giving some bass boost to voice (1). • Cardioid polar pattern allows an expressive vocalist apply mic technique (1) to create more dynamic performance (1). Accept any other suitable response.	**2**

17a	**You are working on a sound creation for a short film and have been asked to add two types of sound.** **Background environment describes which one of the following types of sound?** Answer: A (Ambience)	**1**
17b	**Background music describes which one of the following types of sound?** Answer: E (Underscore)	**1**

18	**Which one of the following best describes 'effects libraries' used for sound creation?** Answer: A (A collection of recorded sounds.)	**1**

19	**You are arranging music and sounds for a movie project using a DAW.** **Explain one reason why you might use tempo changes when arranging music and sounds for a movie.** Award one mark for identification and one mark for an explanation, e.g.: • To adjust the placement of sounds (1) so that they are in sync with visuals (1). • To adjust speed of music (1) to add drama / counterpoint to visuals (1). • To make music and sound follow hitpoints (1) in time with the visuals (1). • Pace of scene can dictate tempo (1) which can be adjusted to fit (1). Accept any other suitable response.	**2**

20a	**Name one form of media that was designed to be downloaded from the Internet in a series of episodes?** Answer: Podcast	**1**
20b	**Which one of the following forms of media uses audio only?** • Answer: C (Radio broadcast)	**1**

21	**A variety of types of sound creation are used to enhance movie productions.** **Explain how voice-overs and spot effects may be used to enhance a movie.** Award one mark for description and one mark for an explanation; Max 2 marks for voice-overs Max 2 marks for spot effects E.g.: • Voice-overs: an (offscreen) speaking part is added (1) to provide a narrative (1). • Voice-overs: explanative narrative is added (1) to help viewer understand character / plot / add drama (1). • Spot effects: representative sound effects are added (1) to emphasise events onscreen (1). • Spot effects: represent onscreen action (1) to add reality / texture / engage audience / emphasise mood (1). • Spot effects. Added to reinforce / replace sounds captured on location (1) to enhance the effect (1) Accept any other suitable response.	**4**

22	**As a sound designer, you are required to create a variety of sounds for projects. One method of sound creation is the use of physical props.** **Explain one advantage and one disadvantage of creating your own sounds for a project using physical props.** Award one mark for identification of an advantage and one mark for an explanation up to a maximum of 2 marks. Award one mark for identification of a disadvantage and one mark for an explanation, up to a maximum of 2 marks. Advantages: • Can create unique / original sounds (1) which work best for the project (1). • Can match sounds to the project / sounds that you require / make realistic sounds (1) to create required effect (1) / sync to project (1). • Can build up bank of own sounds / samples (1) for future use (1). • Can save time (1) by recording and performing live (1). • Can save time (1) by not having to search for sounds (1) Disadvantages: • May be time consuming (1) • May be challenging to record (1) so adding time (1) • May be difficult to find props which give required result (1) missing deadlines / time (1). • Sound from props alone may not always give desired result (1) so requiring further processing (1). Accept any other suitable response.	**4**

Section 2 **Total for this section: 8 marks**

23	**Which two of the following instruments have been used in the example?** Award one mark for each correct answer. Answers: C (Guitar) and H (Violin)	**2**

24	**Explain one way in which the texture of the example changes from 0:07 onwards.** Award one mark for identification of change and one mark for an explanation, e.g.: • More instruments enter (1) to create more layers / thicker / fuller texture (1). • The electric guitar sound becomes distorted (1) creates more depth / makes rougher / harder / makes heavier / more intense (1). • Bass guitar and drum kit enter (1) fills out the lower frequencies (1). • Piano begins to play block chords (1) creates a thicker texture (1). • Acoustic guitar changes strumming pattern (1) rhythm change creates a thicker texture (1). • Texture is thicker (1) as becomes more complex (1). Accept any other suitable response.	**2**

25	**Describe the rhythm of the kick (bass) drum heard throughout the example.** Award one mark for any of the following, up to a maximum of 1 mark: • 4 to the floor • crotchets • on-beats • 4/4 time Accept any other suitable response.	**1**

26	**Sidechain compression has been used on the synth bass part. Describe the effect of the Sidechain compression on the synth bass from 0:08 to 0:29.** Award one mark for identification and one mark for a description, e.g.: • Bass synth sound is emphasised on off beats (1) by the kick (accept 'bass') drum (1). • The kick triggers the compressor (1). This creates a pumping effect (1). • The volume of the bass synth sound is reduced/duck (1) allowing the kick (bass) drum to dominate every beat (1). • Volumes moves up and down (1) as compressor is triggered (1). • Bass Part is given / changed rhythm (1) by compression from kick (1). Accept any other suitable response.	**2**

27	**Describe the chord structure heard between 0:16 and 0:55.** Award one mark for any of the following, up to a maximum of 1 mark; • 12 bar blues • 12 bar • Blues • Numeral depiction (accept relative chord names) • 3 x 4 bar structure Accept any other suitable response.	**1**