

NCFE Level 3 Applied General Certificate in Music Technology (601/6779/8)

Paper Number: P001426

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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 penalising for 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.

Q	Marking guidance	Total
		marks

1	Between 00:20s and 00:29s of Audio File Section 1, the synthesiser melody has been manipulated using a MIDI controller.	4
	Explain two ways in which the sound is being changed.	
	A filter (1) is applied to attenuate HF (1).	
	The attack time (1) has been made longer (1).	
	Accept other reasonable responses.	
2	Audio File Section 1 was created on a DAW. The composer decided to use an existing template when starting the project.	2
	Explain one advantage of using a template when starting a new project.	
	Award one mark for correct advantage and award one additional mark for expansion.	
	May contain pre-set sounds (1), increasing speed of workflow (1).	
	DAW pages/windows set up to show commonly used functions (1) to increase accessibility (1).	
	May contain track set up (1) to facilitate quick creative decisions (1).	
	May contain artists settings applied to other projects (1) allowing for consistency (1).	
3	A hardware synthesiser can be heard from 00:29s of Audio File Section 1.	1
	Which DAW track type would be most suitable for programming the melody for the hardware synthesiser?	
	External MIDI track (1).	
4	Describe how one DAW arranging feature has been used to alter the music between 00:49s and 01.03s of Audio File Section 1.	2
	Time-Signature change (1) from 4/4 to 3/4 (1).	

5	Figure 1 shows controls commonly found on a compressor plug- in.	1
	Which control (A, B, C or D) is used to adjust the threshold?	
	Answer: A	

6	Identify one musical term used to describe the musical structure from 00.06s to the end of Audio File Section 2.	1
	Ternary Form.	
	Also accept ABA.	
7	Describe two musical features of the melody played by the brass instruments between 00:34s and 00:38s of Audio File Section 2.	2
	Plays a chromatically (1) ascending series of notes (1) Plays a series of quavers (1)	
8	Many people are now listening to music via streaming services rather than physical formats.	2
	Explain one way that artists can benefit from this change in the way that music is consumed.	
	Award one mark for valid benefit and award one further mark for valid expansion.	
	Reduced cost (1) where physical copies would have been unsold (1).	
	Multiple royalty payments per person (1) where the same track is streamed more than once by the same individual (1).	
	Success of individual tracks (1) not dependent on sale of album (1).	
	Accept any other valid responses.	
9	Figure 2 shows the piano melody heard between 00:22s and 00:23s of Audio File Section 2. One note which is audible in the part has been omitted from the notation.	2
	Add the correct pitch and rhythm value for the missing note. Use the space shown by the arrow in Figure 2.	
	Award one mark for correct rhythm, and one mark for correct pitch:	
	(Middle) C (1) Quaver (1).	

10	 Which term best describes the rhythm of the melody heard between 00:02s and 00:06s of Audio File Section 2? A. Accent B. Staccato C. Syncopation D. Triplet Answer: C Syncopation 	1
11	You have been asked to remix Audio File Section 2 in an EDM (electronic dance music) style. Describe two musical elements you would change to make the music typical of EDM.	2
	Award any creditable proposed alteration to suit EDM style, up to a maximum of two marks, eg: Change bass drum rhythm to a four-on-the-floor (1). Change instrumentation to electronic instruments/synthesisers (1). Change structure to promote longer individual sections (1). Introduce 'drops' before new sections are introduced (1).	

12	 The Flaming Fretboards are planning a multi-track recording session. They want a suitable audio interface. They plan to work with an acoustic drummer, guitarist, bassist and saxophonist. They would like to record the entire band together at the same time. There are four audio interfaces available. They are listed below, showing the number of inputs and outputs each has. Which audio interface specification (A, B, C or D) is most appropriate for the band's needs? A. 2 in/2 out B. 3 in/2 out C. 4 in/3 out D. 24 in/8 out 	1
13	The Flaming Fretboards are going to use a DI box when recording the bass guitarist. State one function of a DI box in a recording environment.	1
	Level matching (1).	
	To convert unbalanced to balanced signal (1).	
	Impedance matching (1).	
	Accept other valid responses.	

14	The Flaming Fretboards have decided to set their audio interface to record at a sample rate of 96kHz.	2
	Explain one disadvantage of recording at this sample rate.	
	Award one mark for valid disadvantage and one mark for expansion:	
	A sample rate of 96kHz will capture a larger range of sound frequencies than necessary (1). This will lead to increased audio file sizes (1).	
	OR	
	Increased file sizes/quality (1) will require increased storage capacity (1).	
15	Figure 3 and Figure 4 show frequency response graphs for two different studio monitors.	2
	Explain why using the monitor represented in Figure 4 would be advantageous when mixing.	
	All audible frequencies can be reproduced (1); the frequency response is more even (1).	
	The even frequency response (1) allows for more accurate reproduction of music (1).	
	Accept other valid responses.	
16	A delay effect plug-in has been applied to the guitar part from the start of Audio File Section 3. Between 00:19s and 00:38s the delay effect is modified.	2
	Which two delay parameters have been changed?	
	Delay time (1) and Feedback (1).	
17	At 00:43s of Audio File Section 3, an editing problem can be heard.	2
	Explain how trimming an audio file can create a problem such as this.	
	Audible 'click' (or pop) (1) if a file is trimmed outside of a zero- crossing point (1).	
	Accept other reasonable responses.	

18	A sawtooth wave can be heard at 00:16s of Audio File Section 4. The wave has a fundamental frequency of 440Hz. What is the frequency of the third harmonic of the wave? A. 40Hz B. 146.6Hz C. 880Hz D. 1320Hz Answer: D 1320Hz	1
19	 The strings and electronic drums heard between 00:00s and 00:20s in Audio File Section 4 were recorded at a sample rate of 11025Hz. Explain how the sample rate setting has altered the string sound. The sample rate has been set too low (1) and this has resulted in high frequency content being lost (1). Sample rate insufficient (1) to ensure all audible frequencies recorded (1). Accept other valid responses. 	2
20	 Describe the application of filtering heard from 00:50s onwards in Audio File Section 4. A High Pass Filter (1) is applied to reduce LF (1). A High Pass Filter (1) is being swept upwards (1). A High Pass filter (1) is applied to the whole mix (1). 	2

21	ADSR co and plug		re commonly found on software instruments	3
	Describe envelop		ction of each of the following in terms of tion:	
	a) Attac b) Deca c) Relea	у		
	Attack: T pressed		n for the sound to reach peak volume after a key is	
	Decay: T (1).	ïme take	n to drop from peak volume to a set sustain level	
	Release: released		en for the sound to decay after the key is	
22	You wis	h to imita	ate the sound of an electric guitar.	10
		-	e subtractive synthesis or frequency synthesis.	
	Assess required		bility of each type of synthesis for creating the	
	Band	Marks	Description	
	5	9–10	Excellent. Knowledge of concepts and specific functions relating to synthesiser operating practices, which uses appropriate terms and language fluently.	
			Broad range of concepts used to support ideas. Written response is coherent and clear throughout. Conclusions are detailed, balanced and valid throughout.	
	4	7–8	Very Good. Knowledge of concepts and specific functions relating to synthesiser operating practices, demonstrating some insight, with reference to generally appropriate terms and language.	
			Range of relevant portable synthesiser functions, processes and terminology are considered and used to support their evaluation. Written response is coherent and clear throughout. Conclusions are supported by valid descriptions of functions/terminology.	

3	5–6	Good. Consistent reference to concepts and functions relating to synthesiser operating practices with a reasonable grasp of ideas. Use of terms and language may not always be relevant.
		Limited scope of evaluation which is not always used in reference to appropriate theories and concepts. Evaluation is limited and focuses on the description of the various functions of synthesisers rather than the effect they have had on the intended sound. Written response is not always clear and may not be structurally coherent. Any conclusions drawn are limited and not always supported by the correct application of theory.
2	3-4	Inconsistent. Some broad reference to the concepts of synthesiser types, but not specific to synthesiser function. The impact of synthesiser methodology in relation to the intended sound is vague, but may display knowledge in some areas.
		synthesiser features, yet lacks description of the effect these concepts have had. Written work inconsistent and lacking in structure. Few to no valid conclusions drawn.
1	1–2	Limited. Little reference to the concepts of synthesiser functions, and not specific to synthesiser type. No relevant examples of the impact on the intended sound. Written response is inaccurate or is extremely limited in detail. No valid conclusions drawn.
	0	No rewardable material. No response or response inappropriate.
Indicativ	ve conte	nt:
re-create strings, a to introdu reference	e specific and how uce an a e use of	nsider how synthesiser settings can be utilised to guitar sounds, such as 'plucked' or 'strummed' envelope settings, such as attack, can be set short rtificial 'click' or strike-sound. Learners may LFO for pitch or tremolo modulation to recreate o effects in a guitar performance.
	•	nsider how oscillators are chosen. It would be d that an oscillator with even and odd harmonics

 sound. These processes are the building blocks of subtractive synthesis. FM synthesis adds the manipulation of a carrier wave frequency with modulating frequencies which change the target waveform through wave superposition. It is expected that learners will comment on the somewhat simplistic and straight-forward nature of subtractive synthesis versus the complexity of FM editing and processes. This may lead learners on to explain how FM can be difficult to program and risks sounding un-harmonic as a result. Learners may suggest the use of pre-set sounds through FM due to this complexity, especially with respect to conclusive statements. 	
Overall, conclusions should indicate that whilst FM may provide the best apparent sound in this scenario, the workflow advantages arising from the relative simplicity of subtractive synthesis may result in the latter form of synthesis being the preferred choice in this scenario.	
23A sampled acoustic piano can be heard throughout Audio File2	
Section 4. Explain why velocity switching is useful for replicating acoustic instruments within a sampler. Velocity switching adds greater detail to the instrument (1) through the capture of notes/sounds at different velocities (1). Accept any other valid response.	

24	 Which one of the following activities relates only to the role of a performer? A. Maintaining and repairing the PA system B. Setting gain levels on the mixing desk C. Setting up microphones on stage D. Updating repertoire on a regular basis Answer: D Updating repertoire on a regular basis 	1
25	 The Blistering Beats are an EDM group who perform house music. They are considering touring with an electronic drum machine rather than an acoustic drum kit. Explain two stylistic advantages of performing with an electronic drum machine rather than an acoustic drum kit. Award one mark for each plausible stylistic advantage (two marks maximum). Award second mark for valid expansion (two marks maximum). EDM is typically highly quantised (1), which will be easier to achieve with an electric drum machine (1). The available range of sounds from an electronic drum machine likely to suit the style of music (1) as EDM typically features electronic or sample-manipulated drum sounds (1). More complex patterns available (1) as machine not limited in terms of number of limbs (1). 	4
	Accept any other valid responses.	

26	The Blis the banc		eats tour with a DJ who plays music before	2
	Describe other pla		vantage for a DJ of using CDs rather than ources.	
	High qua heard (1)	• • •	lowing for all audible frequency content to be	
		•	lynamic range (1) compared to vinyl (1). (do not amic range' in isolation).	
			t is more reliable than streaming / hard disc files e of playback errors (1).	3
			where appropriate or disadvantages to other when compared to CD:	
	eg Can b vinyl (1).	e more e	easily cue'd (1), compared to other formats like	
27	equipme	ent for th	eats are planning to buy new live sound eir next tour. They will be performing at sma no more than 100 people.	10 III
	These are the band members:			
	Ashia – Electric drum machine Hari – Keyboard and backing vocals Matt – DAW/laptop Jenny – Vocals			
	The venues will supply onstage floor monitor (foldback) systems for the band.			
	Assess the band's live sound equipment requirements.			
	Band	Marks	Description	
	5	9–10	Excellent. Knowledge of concepts and specific functions relating to live sound equipment and technology, which uses appropriate terms and language fluently.	
			Broad range of concepts used to support ideas. Written response is coherent and clear throughout. Conclusions are detailed, balanced and valid throughout.	

	1		
4	7–8	Very Good. Knowledge of concepts and specific functions relating to live sound equipment and technology, demonstrating some insight and with reference to generally appropriate terms and language. Range of relevant functions, processes and terminology are considered and used to support their evaluation. Written response is coherent and clear throughout. Conclusions are supported by valid descriptions of functions/terminology.	
3	5–6	Good. Consistent reference to concepts and functions relating live sound equipment and operating practices with a reasonable grasp of ideas. Use of terms and language may not always be relevant.	
		Limited scope of evaluation which is not always used in reference to appropriate theories and concepts. Evaluation is limited and focuses on the description of the various live sound equipment types and their primary function, rather than exploring potential choices or offering justification. Written response is not always clear and may not be structurally coherent. Any conclusions drawn are limited and not always supported by the correct application of theory.	
2	3–4	Inconsistent. Some broad reference to the concepts of live sound equipment types, but not linked to the scenario. The impact of live sound equipment choices in relation to the intended function is vague, but may display knowledge in some areas.	
		Written work focuses on identification of live sound equipment features, yet lacks description of the effect these concepts have had. Written work inconsistent and lacking in structure. Few to no valid conclusions drawn.	
1	1–2	Limited. Little reference to the concepts of live sound equipment, and not specific to the scenario. No relevant examples of the benefits of each piece of equipment or why they have been chosen. Written response is inaccurate or is extremely limited in detail. No valid conclusions drawn.	

	0	No rewardable material.		
Indicative	conte	nt:		
PA system be active o for each. F set up, or o speakers. I systems. D will indicate especially associated considered	consis or pass OH sy cross-c Learne Driver s e 12" (i for ED louds I. Use I, inclu	requirements: ting of a FOH element (speakers) ve and higher level learners will o stem could consist of a simple full ver components, including a subv rs could consider small line-array zes could be referenced, and cor and above) being suitable for LFE M styles of music. Crossover com beaker management systems cou of technology alongside these sys ling the use of system calibration whones, pink noise or tablet comp	offer justification l-range speake woofer and top (modular arra rect response application, ponents or ld be stems could be using	n er - y) s
IEMs or sid	de-fills	erations for the band: (this should only be considered as plied monitoring).	s an alternativ	e
importance	e of cha n coule	uld be considered and learners w innel count, EQ and other mixing I be considered, including the opt laptop.	desk functions	
also be con for these its and long ba systems wh as well as the stands offe	nsidere ems. F alance hich of transfe ering m es and	nt, such as cables, multicore and d, and there is differentiation in re or example: short unbalanced cal d cable runs to maximise quality. Fer both sends and returns to facil rring stage signals to FOH for mix ore flexibility in positioning over st rack hardware to allow the safe tra	esponse levels bles, DI boxes Multicore litate monitorir king. Boom traight stands.	g
	uency	also be considered and learners responses and additional requirer		
DI: active/p	bassive			

28	 The Blistering Beats have been allocated a set time of 30 minutes. The band want to play the maximum possible number of songs in the time allocated. Figure 5 shows a list of the songs that they can perform, along with the running time of each song. All of the songs are controlled from a DAW so that the timings for each song will be exact. What is the maximum number of songs that the band can perform in 30 minutes? Correct response: 6 Songs 	1
29	Figure 6 shows a stage plan, including performer positions, microphones/DI and monitors.	2
	Describe one problem highlighted by the stage plan.	
	Two potential problems:	
	Performer Hari does not have a monitor (1) and will struggle to hear themselves on stage (1).	
	Or	
	Performer Hari does not have a DI box (1) so the keyboard signal won't reach the mixing desk (1).	

30	HD, High-Def, or High-Quality Streaming is becoming more popular and can offer higher sample rates and bit-depths than CD standards.	2
	Describe one potential disadvantage of high definition streaming for users.	
	Requires more data bandwidth (1) which may be more costly to the end user (1).	
	Requires more data bandwidth (1) requiring a higher speed connection to work (1).	
	Premium service (1) costs more for the end-consumer than regular services (1).	
	Accept any other valid responses.	
31	The Blistering Beats are preparing to export their music in a digital file format.	1
	Which of these formats is most appropriate for digital music downloading?	
	A. AVI B. MP3	
	C. MP4	
	D. PDF	
	Answer: B MP3	
32	PRS for Music is an agency formed from the merger of PRS (the Performing Right Society) and MCPS (the Mechanical-Copyright Protection Society).	2
	Identify two functions that PRS for Music provides for artists.	
	Award one mark for each up to a maximum of two marks:	
	Licensing music (also accept protecting) (1).	
	Funding support for artists (1).	
	Payment (accept collection) of royalties (1).	
	Influencing policy (1) (also accept lobbying).	

33	The Blistering Beats are using different forms of social media to promote their release.	2
	Identify one form of social media which the band could use to promote their release and describe how this would work.	
	Award one mark for social media service (award one mark for valid brand), and one additional mark for function.	
	Microblogging service (1) – sharing short text information (1).	
	Music sharing service (1) – sharing audio files/clips to followers (1).	
	Social networking service (1) – blogging to followers (1) (or aggregating content across different platforms).	
	Video streaming site (1) – sharing video content (1).	
34	Figure 7 shows a poster promoting the Blistering Beats' next performance.	3
	 a) Describe one piece of information which is missing from the poster that the audience would need to know. b) Explain one different piece of information that is not on the poster that could be included to attract the audience. 	
	a) The poster does not contain the date (1).	
	The town or city is missing (1).	
	No venue name/address or contact details (1).	
	b) Include social media link/reference (1) so that followers can access further information about the band (1).	
	Provide the details of the support act(s) (1) thereby attracting fans of those acts to the event (1).	
	Accept other reasonable responses.	