Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						6	7	1	8	/	0	1	Signature	

Paper Reference(s)

6718/01

Edexcel GCE

Music Technology

Advanced

Controlling and Interpreting MIDI Data

Thursday 15 June 2006 – Morning

Time: 1 hour

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
Total	

Materials required for examination

One audio CD per candidate
One data CD per candidate
MIDI workstation
GM sound source
Sequencing software

Items included with question papers

Printed score

Instructions to Invigilators

A music technology specialist should be present throughout the examination.
The examination should be conducted in the following three phases:

1. Equipment configuration: Invigilators should ensure that candidates test that the audio CD plays back and that the MIDI file CD will import into the sequencing software correctly. Candidates should listen to no more than 30 seconds of each CD during the testing process.
2. Reading time: Candidates should be allowed 10 minutes to study the question paper and printed score.
3. Examination: Candidates should be allowed one hour to complete the examination.

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.
You may listen to the audio recording and MIDI file of the song as many times as you wish, during the examination.
Answer ALL questions in the spaces provided in this question paper.
Write your answers in the spaces provided or, where appropriate, choose an answer and put a cross in the box (☒). Mark only one answer for each question. If you change your mind about an answer, put a line through the box (~~☒~~) and then mark your new answer with a cross (☒).

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 11 questions in this question paper. The total mark for this paper is 100.
There are 16 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are advised to consider the number of marks that a question has been allocated when deciding how long to spend on a question.

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Candidates should note that in order to align the notated score with the MIDI file, bars 1–5 are silent. The music begins at bar 6.

Section A: Analysis and Discrimination

Instructions for Section A

1. **Load the AUDIO CD into your CD drive or audio CD player and listen to track 1.**

2. **Listen to the music while following the printed score.**

You may listen to the music as many times as you wish.

1. Look at the first page of the score **(bars 6–15)**.

(a) What key is this piece of music in? Put a cross in the correct box.

A minor ☒ D major ☒ G major ☒ C major ☒

(1)

(b) Complete the table below, giving the meaning of each of the following score markings.

Bar	Part	Score Marking	Meaning
6	A parts	Swing feel 	**(2)**
9	Drum Kit		**(2)**
11	Electric Guitar	Palm mute	**(2)**

(Total 7 marks)

Q1

Leave blank

2. Look at verse 1 **(bars 10–25)** and the chorus **(bars 26–33)** on the score.

(a) Identify the chords played by the **Electric Piano** in the following bars. You should use conventional chord notation, e.g. Am7.

	Bar 10	**Bar 11**	**Bar 12**	**Bar 13**	**Bar 14**	**Bar 15**
Chord						

(6)

(b) Describe the phrase structure of the **Electric Guitar** during verse 1.

.....

.....

.....

(2)

(c) Describe **three** differences in **instrumental texture** between verse 1 and the chorus.

1 .....

(1)

2 .....

(1)

3 .....

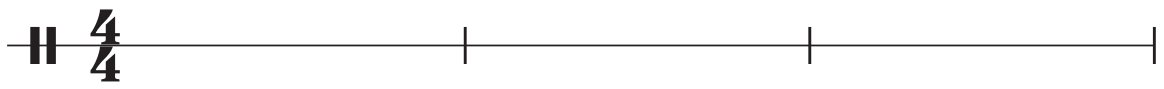
(1)

Q2

(Total 11 marks)

Leave blank

3. Look at the **Drum Kit** line in **bars 72–74**. Using the percussion stave below, notate the rhythm played by the **snare drum** during these bars. You should include rests where appropriate.



Q3

(Total 3 marks)

4. (a) Which of the following best describes the genre of this piece of music? Put a cross in the correct box.

Pop ☒ Motown ☒ Country ☒ Funk ☒

(1)

(b) Identify **three** features of the piece that suggest the style you have chosen. You may include musical as well as production features.

1 .....

(1)

2 .....

(1)

3 .....

(1)

Q4

(Total 4 marks)

Leave blank

5. (a) Using the table below, comment on the production of the **Drum Kit** on the audio recording. An example is provided.

Aspect of production	Comment on production
Pan	• Fairly wide stereo image • Placement is 'as the audience hears it', with ride cymbal to left and hi-hat to right hand side.
Balance	**(2)**
Equalisation	**(2)**
Effects Processing	**(2)**

(b) Identify **three** effects, **apart from reverb**, used on the voice in the middle section **(1'26" on the audio CD)**.

1 .....

(1)

2 .....

(1)

3 .....

(1)

(c) Which of the following processes has been used to give a 'vintage' sound to the **Trumpet** and **Saxophone** tracks? Put a cross in the correct box.

Adding phaser effect ☒ Restriction of frequency range ☒ Sample looping ☒ Proximity effect ☒

(1)

(Total 10 marks)

Q5

TOTAL FOR SECTION A: 35 MARKS

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Candidates should note that in order to align the notated score with the MIDI file, bars 1–5 are silent. The music begins at bar 6.

Section B: Controlling and Interpreting MIDI Data

Instructions for Section B

1. **Load/open your music sequencing software.**

2. **Import the file *normal.mid* from the MIDI File Data CD ROM into your music software. If you are using Cubasis 4 or Cubasis 5 you should import the *offset.mid* file. If you are using Sonar software you should open the *normal.mid* file from the file menu.**

3. **Ensure that you have a General MIDI sound module/sound card/keyboard connected to your computer.**

4. **Plug your headphones into your sound module/sound card/keyboard.**

5. **Listen to the MIDI file version of the examination music whilst following the printed score.**

6. **Complete the following statements:**

The first note of the music in the MIDI file version of the song can be heard during (tick your selection):

Bar 4 ☐

Bar 6 ☐

Other (please specify) ☐

I have used the following MIDI file from the CD ROM in this examination (tick your selection):

normal.mid ☐

offset.mid ☐

The name of the sequencing software I am using is .....

You may listen to the music as many times as you wish.

In order to answer this section you will need to examine the MIDI file data using a range of editors within your music sequencing software.

You are advised to take note of the number of marks allocated to each question when deciding how long to spend on each question.

Leave blank

6. (a) Both the **Synthesiser** and **Electric Guitar** tracks use program changes during the piece. Using the table below, identify **two different** program change values used for each track, and explain why they have been used.

Track	Program change value 1	Program change value 2	Explanation
Synthesiser (MIDI channel 5)	**(1)**	**(1)**	**(1)**
Electric Guitar (MIDI channel 7)	**(1)**	**(1)**	**(1)**

(b) Identify **three** MIDI programming techniques used in the chorus **(bars 26–33)** to recreate the strummed **Electric Guitar** line.

1 .....
(1)

2 .....
(1)

3 .....
(1)

Q6

(Total 9 marks)

Leave blank

7. (a) Analyse the **Electric Piano** track between **bars 34–82**. Using the table below, identify errors in **pitch** in the MIDI file compared with the score. The first line has been completed as an example.

	Bar in SCORE	**Beat**	**Correct Pitch in SCORE**	**Incorrect Pitch in MIDI FILE**
Example	38	1	C	D
1				
2				
3				
4				
5				
	(1 mark x5)		(1 mark x5)	

(10)

(b) Identify **two** different bars within this section on the Electric Piano track that contain inappropriate note lengths.

(i) Bar .....

(1)

(ii) Bar .....

(1)

Leave blank

(c) The **Electric Piano** has been sequenced to include both right hand and left hand lines in a single MIDI track. Identify **two** advantages and **two** disadvantages of this approach compared to sequencing the right and left hand lines on separate tracks.

Advantage 1

.....

(1)

Advantage 2

.....

(1)

Disadvantage 1

.....

(1)

Disadvantage 2

.....

(1)

Q7

(Total 16 marks)

Leave blank

8. MIDI controller events have been used at the start of this song to control various parameters on the playback device being used. This data is transmitted at the beginning of each track.

(a) Identify the initial values of controllers 7, 11 and 93 for each of the following tracks.

Track	MIDI channel	Controller 7	Controller 11	Controller 93
BV's	2			
Trumpet	3			
Tenor Saxophone	4			
Synthesiser	5			

(12)

(b) For each of the following controllers, explain how the range of values affect the sound. An example is provided.

Controller name	Value range	Explanation of range
Modulation	0–127	A value of 0 would give no vibrato. 127 would produce maximum vibrato.
Pan	0–127	
Effect 1 Depth	0–127	
Main Volume	0–127	

(3)

Q8

(Total 15 marks)

Leave blank

9. The diagram below shows MIDI data contained within a 'header section' of a sequenced track.

Event Type	Start	End	Length	Data 1	Data 2	Chn
Program Change	05.01.01.060	-	-	2	0	6
Controller	05.01.02.000	-	-	10	64	6
Controller	05.01.02.060	-	-	7	100	6
Controller	05.01.03.000	-	-	11	110	6
Controller	05.01.03.060	-	-	91	48	6
Controller	05.01.04.000	-	-	64	25	6
Controller	05.01.04.060	-	-	93	0	6
Controller	05.02.01.000	-	-	1	90	6

(a) Which family of instruments does the GM sound used above belong to? Put a cross in the correct box.

Tuned Percussion ☒ Wind ☒ Ethnic ☒ Keyboard ☒

(1)

(b) Why are the start times of the MIDI events staggered?

.....

.....

.....

(2)

(c) Describe **two** mistakes the MIDI file programmer has made when producing header data shown in the diagram above.

1 .....

.....

(2)

2 .....

.....

(2)

(d) Name **one** continuous controller and **one** switch controller being used in the diagram above.

Continuous controller name .....

(1)

Switch controller name .....

(1)

(Total 9 marks)

Q9

Leave blank

10. MIDI is a universal language that allows MIDI devices such as keyboards, synthesisers and sequencers to communicate with each other. Give a brief definition for each of the following technical terms relating to MIDI devices.

(a) Multi-timbral

.....

.....

.....

(2)

(b) MIDI Thru

.....

.....

.....

(2)

(Total 4 marks)

Q10

Leave blank

11. MIDI file programmers use a combination of sequencing techniques in an attempt to achieve a musical performance.

Using the table below, explain how the programmer has used sequencing techniques to recreate musical features. An example has been provided for you.

	Bar number(s)	Track	Musical feature	Sequencing techniques used to recreate the musical feature
	10–17	Bass	'Groove' created against bass drum	• Probably entered in real time because it's not exactly in time – less mechanical • Aligned with bass drum using a snap/quantise value of 8T (triplet quavers)
1	25–30	Trumpet	Dynamic variation	**(2)**
2	26–31	Cabasa	Accents	**(2)**
3	55–56	Drums	Grace note (flam) on snare	**(2)**
4	65–67	Voice	Panning effect	**(2)**
5	69–74	Electric Guitar	Switching between palm mute and 'ordinary'	**(2)**
6	115–122	Synthesiser	Portamento effect	**(2)**

Q11

(Total 12 marks)

TOTAL FOR SECTION B: 65 MARKS
TOTAL FOR PAPER: 100 MARKS

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