Write your name here

Surname		Other names

**Pearson Edexcel
Level 3 GCE**

Centre Number

Candidate Number

Music Technology

**Advanced Subsidiary
Component 4: Producing and analysing**

Wednesday 6 June 2018 – Morning
**Time: 1 hour 45 minutes
(plus 10 minutes setting up time)**

Paper Reference
8MT0/04

You must have: Figure 1 for Question 6 (enclosed), CD ROM containing component audio/MIDI files, blank CD for burning finished tasks, headphones or monitor speakers, digital audio workstation (DAW) and MIDI keyboard

Total Marks

Setting up time
- Open a new project in your DAW using 16 bit/44.1kHz sample rate.
- Save the project as '**comp4_your candidate number' (e.g. comp4_1234)** in the folder designated by your centre.
- Set the metronome to **106 bpm.**
- Import 'drums.wav' to a new track in your DAW, aligned with the beginning of bar 1.
- Ensure that the drums are audible and begin at beat 1 of bar 2. Ensure the drums are in time with the metronome during the first 4 bars.
- You must not open the paper until instructed to do so by the invigilator.

Instructions
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- Save your audio files for Questions 1, 2, 3 and 5 within the 1 hour 45 minutes examination time.
- You must ensure that the left and right earpieces of your headphones are worn correctly.
- Access to a calculator or calculator software is not permitted.
- Access to the internet or local network is not permitted.

Information
- The total mark for this paper is 84.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice
- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

Pearson

SECTION A

Answer ALL questions. Write your answers in the spaces provided.

Question 1 is about the drum part.

1 Listen to the drums that you have imported.

(a) The drum sounds used in this part are individual sampled drum hits.

(i) Complete the following sentence by selecting **two** of the following terms:

(2)

digital recording	distortion effect	filter
MIDI keyboard	modulation effect	pre-amp

A sample is a .... that can

be triggered using a ....

(ii) State **two** advantages of using sampled drum sounds rather than recording a drum kit.

(2)

1 ....

....

2 ....

....

(iii) List **three** settings that need to be made when assigning a sample to a sampler instrument.

(3)

1 ....

2 ....

3 ....

(b) The drums are out of time in bars 22–30. Edit the audio so that the drums are in time.

(3)

> **Bounce/export the completed drum part as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.**
>
> **Name it 'q1_your candidate number' (e.g. *q1_1234*).**

(Total for Question 1 = 10 marks)

Question 2 is about the bass part.

2 Import 'bass.mid' to a new track in your DAW. Align the part so that the first note is at the start of bar 2.

Import 'bass example.wav' to a new audio track in your DAW. This file illustrates how bars 2–3 of the bass should sound. Do not use this audio in your final mix.

(a) Choose a bass guitar sound that is similar to 'bass example.wav'. Ensure that the octave matches the example.

(3)

(b) There are timing errors in the bass part in bar 18. Correct the rhythm so it is the same as bar 20. Ensure that the pitches remain unchanged.

(3)

(c) (i) Explain how the velocity shaping used in bars 2–3 helps give the bass part a human feel.

(2)

....

....

(ii) State **one** other aspect of the MIDI programming in bars 6–7 that has helped give the bass a human feel.

(1)

....

(d) Ensure that the velocity response of your bass guitar sound matches bar 3 of 'bass example.wav'.

The velocity shaping in bar 4 is incorrect. Correct the velocity shaping so it is the same as bar 3.

(3)

> **Bounce/export the completed bass part as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.**
>
> **Name it 'q2_your candidate number' (e.g. *q2_1234*).**

(e) The image below shows the EQ section found on some bass amplifiers.
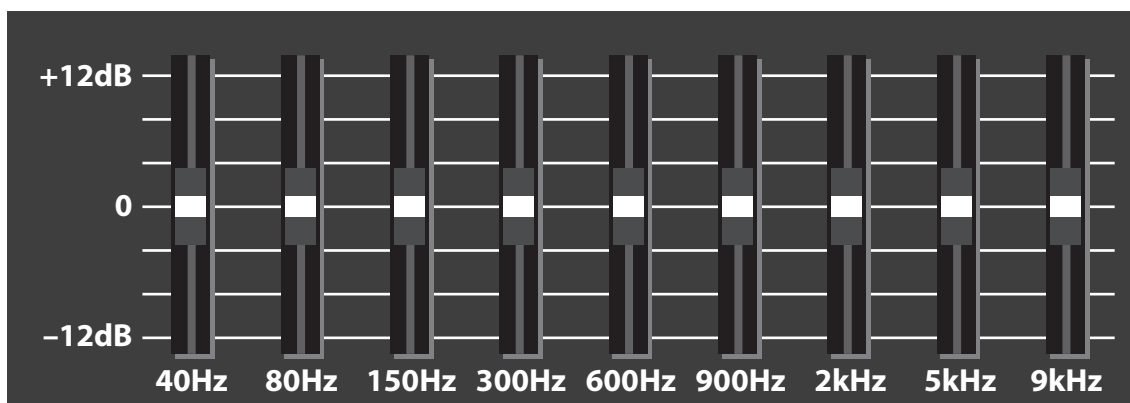
Some bass players use a plectrum to achieve a brighter attack than 'bass example.wav'.

State **two** frequency bands shown on the EQ that you would boost to enhance the bright attack.

(2)

1 ....

2 ....

(Total for Question 2 = 14 marks)

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Question 3 is about the vocals.

3 Import 'vocal.wav' to a new track in your DAW. The beginning of this audio track
should be aligned with the start of bar 1. The vocals begin in bar 6.

(a) There is some intrusive noise in the vocal track in bars 42–49. Remove the noise
whilst keeping the vocal intact.

(4)

(b) The EQ of the vocal is dull on the phrase 'No I don't mind' that starts at the end of
bar 16. EQ this phrase so it matches the previous vocal parts.

(3)

> **Bounce/export the completed vocal part as a single 16 bit/44.1kHz stereo .wav
> file to the designated folder on your computer.**
>
> **Name it 'q3_your candidate number' (e.g. *q3_1234*).**

(c) (i)   Name the audio connector shown in the picture below.

(2)

....

(ii) State **two** uses for this type of connector.

(2)

1 ....

....

2 ....

....

(d) (i) Name the audio connector shown in the picture below.

(1)

....

(ii) This type of connector is used for balanced connections. Explain how balanced connections minimise noise.

(3)

....

....

....

....

....

....

(iii) State **two** possible sources of unwanted noise in an audio cable.

(2)

....

....

(Total for Question 3 = 17 marks)

Question 4 is about the keyboard part.

4   Import the audio file 'keyboard.wav' to a new track in your DAW. Align the part so that the keyboards begin playing at the start of bar 2.

(a) (i)   Modulation effects are produced by an LFO. State what these **three** letters stand for.

(2)

....

(ii) State what aspect of the sound is being modulated in a tremolo effect.

(1)

....

(b) (i)   The electric organ is often used with a motorised rotating speaker that produces a deep modulation effect. The speed can be set to slow or fast.

Identify **two** bars between bars 22-30 where the speed changes from slow to fast.

(2)

1   ....

2   ....

(ii) The rotating speaker is a metal horn that physically displaces the air as it revolves.

State **two** potential sources of unwanted noise when using a microphone to record this type of speaker.

(2)

1 ....

....

2 ....

....

(iii) State **two** methods of adding distortion to an electric organ, apart from using plug-ins in a DAW.

(2)

1 ....

....

2 ....

....

(Total for Question 4 = 9 marks)

5 You should now have the following tracks in your DAW: drums, bass, vocal and keyboards.

Follow the instructions below to produce a final stereo mix.

(a) Compress the lead vocal.

- Ensure that all parts of the vocal can be heard above the other parts.
- Ensure that the dynamics of the performance are level throughout and do not get buried or jump out of the mix.

(3)

(b) Apply a 1/4 note delay to the vocal on the word "yeah" at the start of bar 29.

- Only the word "yeah" should be affected
- The number of repeats should be set so the delay has died away by the start of bar 30.

(3)

(c) Apply a 2 second reverb to the vocal.

(3)

(d) Apply a mono tremolo effect with a rate of 1/16 note to the keyboard in bars 30–31.

(3)

(e) Balance the mix.

(3)

(f) Produce a final stereo mix.

- Ensure that the mix output is at as high a level as possible.
- It should be free from distortion.
- Do not limit or compress the mix output.
- Ensure that silences at the beginning and end do not exceed one second.

(3)

> **Bounce/export the completed final mix as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.**
>
> **Name it 'q5_your candidate number' (e.g. *q5_1234*).**

(Total for Question 5 = 18 marks)

TOTAL FOR SECTION A = 68 MARKS

SECTION B

Answer Question 6. Write your answer in the space provided.

6 Figure 1 (refer to Figure 1) is a picture of a microphone placement for a female vocalist. Evaluate the recording techniques used.

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P 5 8 4 9 9 A 0 1 0 1 2

(Total for Question 6 = 16 marks)

TOTAL FOR SECTION B = 16 MARKS
TOTAL FOR PAPER = 84 MARKS

P 5 8 4 9 9 A 0 1 1 1 2

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