VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

Victorian Certificate of Education 2007

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

									Letter
Figures									
Words									

VCE VET MUSIC INDUSTRY (Technical production)

Aural and written examination

Thursday 15 November 2007

Reading time: 9.00 am to 9.15 am (15 minutes)
Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	10	10	25
B	25	25	75
			Total 100

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied
- Question and answer book of 12 pages.
- Answer **all** questions in the spaces provided.
- An audio compact disc will run continuously throughout Section A of the examination. The audio compact disc will run for 21 minutes.

Instructions
- Write your **student number** in the space provided above on this page.
- You may write at any time during the running of the audio compact disc, and after it stops.
- All written responses must be in English.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A

Instructions for Section A

The audio CD plays throughout Section A. In **Questions 1–10**, audio excerpts are played twice.
The announcer explains how the audio excerpt(s) for each question will be played.

Question 1

The following saxophone excerpt has two parts. Identify the type of signal processing used on the second part of the excerpt.

_____

1 mark

Question 2

The following vocal excerpt has two parts. Both parts use the same type of effect.

a. What effect has been used in both parts?

_____

b. Which parameter has been altered between the first and second parts?

_____

2 marks

Question 3

Identify which of the following frequencies are being played: 50 Hz, 125 Hz, 500 Hz, 1 kHz, 4 kHz and 8 kHz

a. _____ **b.** _____ **c.** _____ **d.** _____

4 marks

Question 4

The following instrumental excerpt has two parts. Identify the type of signal processing used on the second part of the excerpt.

_____

2 marks

Question 5

The following **two** excerpts are in two parts.

a. **i.** What kind of processing has been applied to the second part of this excerpt?

_____

ii. Describe the audible effect of the processing.

_____

b. **i.** What kind of processing has been applied to the second part of this excerpt?

_____

ii. Describe the audible effect of the processing.

_____

2 + 2 = 4 marks

Question 6

Identify the microphone technique problem in the following vocal excerpt and suggest a solution.

problem _____

solution _____

2 marks

Question 7

The following four song excerpts are in two parts. Describe how the second part of each excerpt has been modified.

a. _____

b. _____

c. _____

d. _____

4 marks

Question 8

The following sound comes from a guitar amplifier. The amplifier is functioning normally. Identify the problem and suggest a solution.

problem _____

solution _____

2 marks

Question 9

Identify the Digital Audio Workstation (DAW) process used in the following instrumental excerpt.

_____

1 mark

Question 10

Identify the editing error in the following drum loop excerpt and suggest a solution.

error _____

solution _____

1 + 2 = 3 marks

Total 25 marks

END OF SECTION A
TURN OVER

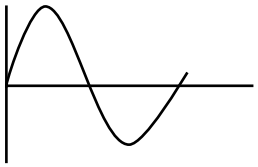
SECTION B

Question 1

The following are diagrams of various sine waves.

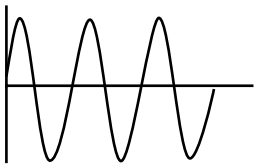
a. Place a tick in the box next to the waveform that has the higher frequency.

i.



☐

ii.



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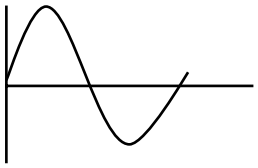
b. Place a tick in the box next to the waveform that has the greater amplitude.

i.



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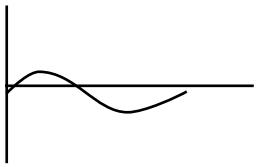
ii.



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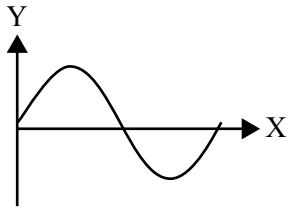
c. Label the X and Y axes of this audio waveform.



X _____

Y _____

1 + 1 + 2 = 4 marks

Question 2

a. How many decibels are perceived as a doubling of volume?

_____

b. In decibels, what is the sound pressure level (SPL) of the threshold of hearing and the threshold of pain?

i. threshold of hearing _____

ii. threshold of pain _____

c. What is the maximum number of hours that is considered safe for exposure to a constant sound pressure level (SPL) of 85 dB?

_____

1 + 2 + 1 = 4 marks

Question 3

What is the speed of sound in air at 20°C? (Include units in your response.)

_____

2 marks

Question 4

What are the four components of an ADSR sound envelope?

A _____

D _____

S _____

R _____

4 marks

Question 5

a. What is the typical frequency range of hearing in humans?

_____

b. Which frequency is two octaves lower than 600 Hz?

_____

2 + 1 = 3 marks

Question 6

a. Place a tick in the box next to the sample rate which offers the best frequency response for recording.

i. 44.1 kHz ☐

ii. 96 kHz ☐

b. What is the maximum frequency each of these systems could record without 'aliasing' occurring?

i. 44.1 kHz _____

ii. 96 kHz _____

c. Place a tick in the box next to the digital audio file that would consume the most hard drive space.

i. 2 minutes @ 44.1 kHz, 16 bit ☐

ii. 1 minute @ 96 kHz, 16 bit ☐

1 + 2 + 1 = 4 marks

Question 7

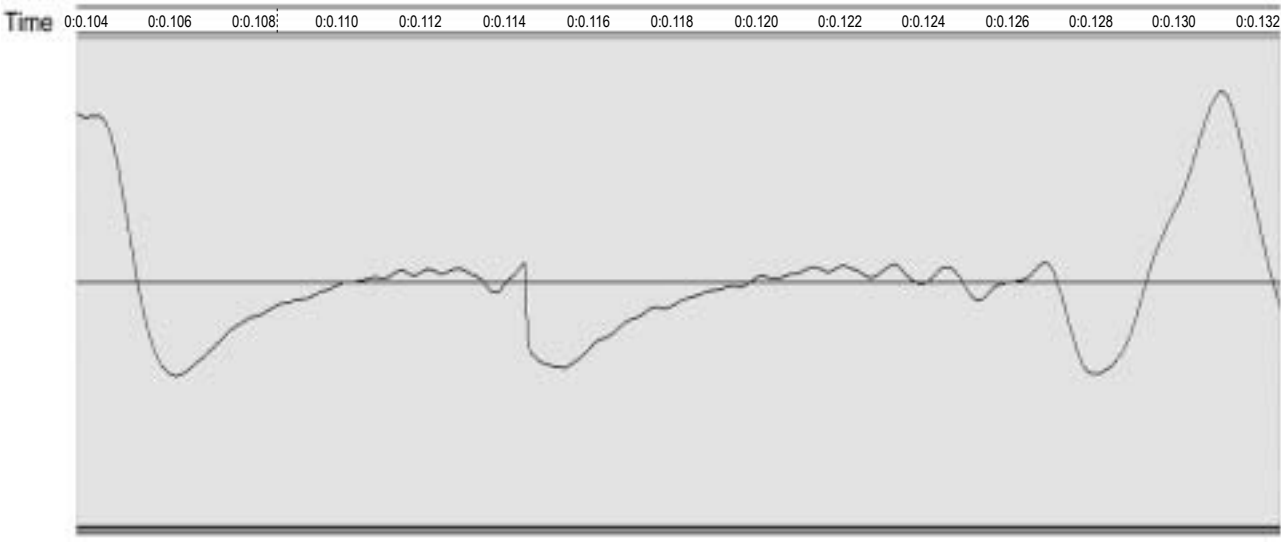
Which offers the better sound quality: audio CD or mp3 at 128 kbps?

_____

1 mark

Question 8

Examine the following diagram of a close-up of a waveform.



a. What is the approximate point in time at which any discontinuity occurs?

_____

b. Describe how this would sound.

_____

2 marks

Question 9

An imported audio file in a Digital Audio Workstation (DAW) plays back at a faster speed than expected.

a. Provide a possible reason that could cause this to occur.

b. Give two solutions to avoid this problem.

1 + 2 = 3 marks

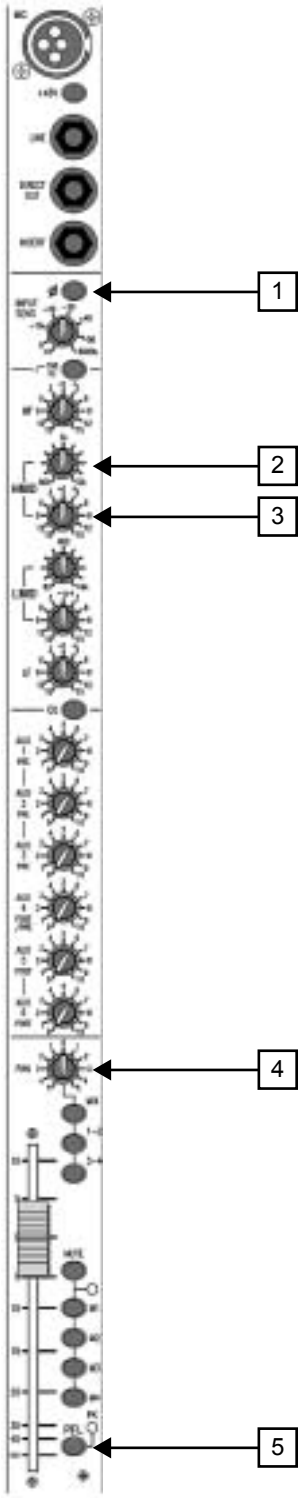
Question 10

Explain the digital audio process of normalising.

2 marks

Question 11

Describe the function of the five controls indicated on the mixing console below.



1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

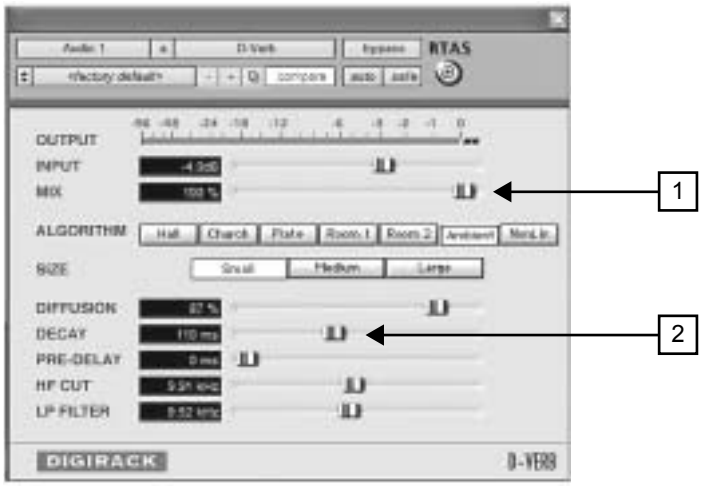
5. _____

_____

5 marks

Question 12

Describe the function of the controls indicated on this reverb plug-in.



1. _____

_____

2. _____

_____

2 marks

Question 13

Two microphones are used to record the sound of a snare drum. One microphone is placed above the drum while the other is placed below the drum. Both microphones are pointing at the snare drum and are the same distance from the sound source.

a. Describe what undesirable audible result would occur when the signals from both microphones are mixed together.

_____

b. Suggest two possible solutions to avoid this.

solution 1 _____

solution 2 _____

1 + 2 = 3 marks

Question 14

A band with a line-up of drums, electric bass, electric guitars and vocals is playing a gig through a PA system in a large venue. A recording of the gig is made using only the stereo outputs of the front-of-house mixing console.

Give three reasons why the recording would not sound the same as the sound at the live performance.

reason 1 _____

reason 2 _____

reason 3 _____

3 marks

Question 15

Sarah is mixing a live gig. Every time the acoustic guitarist approaches the foldback wedge, a low feedback tone is produced.

Give three possible solutions that would stop this happening.

solution 1 _____

solution 2 _____

solution 3 _____

3 marks

Question 16

a. What is phantom power?

_____

_____

b. Name two pieces of audio equipment that require phantom power in order to operate.

_____

_____

2 + 2 = 4 marks

Question 17

a. **i.** Which unit does the symbol Ω represent?

_____

ii. What does it measure?

_____

b. Two 8 Ω speakers are connected in parallel. What is the total impedance?

_____

2 + 1 = 3 marks

Question 18

a. Describe two possible uses for the sub-groups on a mixing desk.

_____

_____

b. What does the '0' marking on a channel fader represent?

_____

2 + 1 = 3 marks

Question 19

Describe the function of a 3-way crossover.

3 marks

Question 20

Explain the function of a $\frac{1}{3}$ octave graphic equaliser.

4 marks

Question 21

In a live mixing setup, what type of auxiliary send is typically used for

i. outboard fx _____

ii. foldback _____

2 marks

Question 22

Give two factors that cause a PA system to feedback.

1_____

2_____

2 marks

Question 23

a. Explain the proximity effect.

b. Which polar pattern microphone does this effect relate to?

2 + 1 = 3 marks

Question 24

a. At a live performance, why is it important to ensure that all of the PA audio equipment is connected to the same GPO (general power outlet)?

_____

b. Give two possible reasons why the stage performance lighting should not be connected to the same GPO as the PA audio equipment.

_____

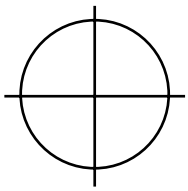
_____

1 + 2 = 3 marks

Question 25

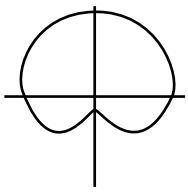
Label the following microphone polar patterns.

a.



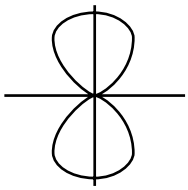
_____

b.



_____

c.



_____

3 marks

Total 75 marks

END OF QUESTION AND ANSWER BOOK