



Victorian Certificate of Education

2006

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures										
Words										

VCE VET MUSIC INDUSTRY

(Technical production)

Aural and written examination

Friday 17 November 2006

Reading time: 11.45 am to 12.00 noon (15 minutes)

Writing time: 12.00 noon to 1.30 pm (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	8	8	25
B	30	30	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 10 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 37 seconds.

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 **Question 1**, each part is played once. In **Questions 2–8**, audio excerpts are played twice.

The announcer explains how the audio excerpt(s) for each question will be played.

Question 1

What signal processor is being applied to the second part of the following guitar excerpt?

1 mark

Question 2

The following guitar 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 the second part?

2 marks

Question 3

The following instrumental excerpt has two parts.

Identify the type of signal processing used on the second part of the excerpt.

2 marks

Question 4

The following two vocal excerpts have two parts.

What kind of processing has been applied to the second part of each excerpt?

a. _____

b. _____

2 marks

Question 5

The following two drum kit excerpts contain recordings of the same performance. Explain why the sound of each part is different.

a. The two parts are different because _____

b. The two parts are different because _____

2 + 2 = 4 marks

Question 6

The following four song excerpts are in two parts. The second parts contain different signal processes or changes in their mix. Identify the process or alteration for each.

a. _____

b. _____

c. _____

d. _____

4 marks

Question 7

Identify which of the following frequencies is being played.

50 Hz, 125 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz

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

4 marks

Question 8

Identify the editing error in each of the following excerpts and suggest a possible solution.

a. error _____

solution _____

b. error _____

solution _____

3 + 3 = 6 marks

Total 25 marks

**END OF SECTION A
TURN OVER**

SECTION B**Question 1**

A flute is playing a note with a fundamental frequency of 440 Hz. What will be the frequency of the note one octave above this?

1 mark

Question 2

Give **two** reasons why it is possible to distinguish between the same note played on a clarinet and on a piano.

reason 1 _____

reason 2 _____

2 marks

Question 3

Circle the microphone which is more directional.

cardioid hyper-cardioid

1 mark

Question 4

Circle the frequency which has the longer wavelength.

1200 Hz 300 Hz

1 mark

Question 5

Explain the function of the following parameters of a delay unit.

a. mix _____

b. feedback or regeneration _____

2 + 2 = 4 marks

Question 6

a. If the sampling rate of a digital system is 48 kHz, what is the highest frequency that can be recorded accurately by that system?

b. What is the name given to this frequency?

2 marks

Question 7

What is the standard bit depth and sampling rate for an audio CD?

2 marks

Question 8

a. Describe the audible result of the spike in the waveform shown above.

b. Suggest a possible editing process that could be used to eliminate the spike.

1 + 2 = 3 marks

Question 9

Explain the term 'non-destructive editing'.

2 marks

Question 10

a. How many bytes per second are recorded if a digital audio system is

i. 48 kHz at 24 bit _____

ii. 96 kHz at 16 bit. _____

b. Which of the two systems above would have

i. the better frequency response _____

ii. the better signal to noise ratio. _____

4 marks

Question 11

Describe the following editing functions which are available on many digital editing systems.

a. the scrub tool _____

b. fade _____

c. cross-fade _____

2 + 2 + 2 = 6 marks

Question 12

A snare drum playing in a room causes reverberation. What **three** components of the sound would be heard by a listener in the room?

component 1 _____

component 2 _____

component 3 _____

3 marks

Question 13

What does RT_{60} mean in relation to reverb?

2 marks

Question 14

a. Identify **two** reasons for tuning or equalising a public address (PA) system installed in a room.

reason 1 _____

reason 2 _____

b. Describe a method for tuning or equalising a PA system and name the equipment you would use.

2 + 4 = 6 marks

Question 15

At what voltage is phantom power typically supplied?

1 mark

Question 16

Explain why a direct injection (DI) box would normally be used to connect the output of a synthesiser to the stage box of a PA system.

2 marks

Question 17

An acoustic guitar is being recorded with two microphones positioned at different distances.

a. What problem might occur if the two signals from the microphones were mixed together?

b. Suggest a solution to this problem.

1 + 2 = 3 marks

Question 18

Circle the type of microphone which is most likely to have the best low frequency response.

large-diaphragm condenser

small-diaphragm condenser

1 mark

Question 19

The pitch of wind and stringed instruments changes with temperature. As the temperature increases, does the pitch rise or fall? Explain why.

a. wind instruments _____

b. stringed instruments _____

2 + 2 = 4 marks

Question 20

Wendy is preparing to carry out a recording using both a condenser and a dynamic microphone. The microphones, leads and mixing console are functioning correctly. Both channels of the mixing console have identical settings. Give a reason why she would be hearing a signal only from the dynamic microphone.

1 mark

SECTION B – continued
TURN OVER

Question 21

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

1. _____

2. _____

3. _____

4. _____

5. _____

Question 22

What common PA system component produces phantom power?

1 mark

Question 23

Describe how to control the levels of foldback speakers on stage using a mixing console.

2 marks

Question 24

List **three** differences between an active and a passive 2-way speaker system.

difference 1 _____

difference 2 _____

difference 3 _____

3 marks

Question 25

A 4 Ω speaker is connected to the output of an amplifier designed to drive an 8 Ω load. Explain why damage may occur to the amplifier.

1 mark

Question 26

What maximum number of hours is considered safe for a person exposed to a constant sound pressure level (SPL) of 85 dB?

1 mark

Question 27

a. If you were to process a kick drum with a compressor and a gate, which device should the signal flow through first?

b. Explain why.

1 + 2 = 3 marks

Question 28

Which control commonly found on a compressor determines the level above which compression of the signal occurs?

1 mark

Question 29

Explain what a compression ratio of 3:1 means.

2 marks

Question 30

You have been asked to set up a PA for a performer who plays an acoustic guitar with a pick-up. List the following components in order of signal flow.

speakers, stereo graphic EQ, DI, power amp, mixer

- a. acoustic guitar _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

5 marks

Total 75 marks