



Victorian Certificate of Education 2011

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

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VCE VET MUSIC INDUSTRY (Technical production) Aural and written examination

Thursday 17 November 2011

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

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	8	8	25
B	23	23	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 14 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 28 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.

Due to copyright restriction,
audio excerpts are not supplied.

SECTION A

Instructions for Section A

The audio CD plays throughout Section A. In **Questions 1–8**, audio excerpts are played twice. The announcer explains how the audio excerpt(s) for each question will be played.

Question 1

- a. The following guitar excerpt is in two parts.
Identify the type of signal processing applied to the second part.

1 mark

- b. The following guitar excerpt is in two parts.
Identify the type of signal processing applied to the second part.

1 mark

Question 2

The following music excerpt is in two parts. Both parts are stereo mixes that have been summed to mono. The second part has incurred unwanted phase cancellation.

- a. List three sounds missing from part 2.

1. _____
2. _____
3. _____

3 marks

- b. What was the likely pan position of the missing sounds before the mix was summed to mono?

1 mark

Question 3

The following speech excerpt contains two problems that require correcting.

- a. Identify the problems in the speech.

1. _____
2. _____

2 marks

- b. Provide two solutions to remove the problems in post-production using a Digital Audio Workstation (DAW).

1. _____
2. _____

2 marks

Question 4

- a. Compare the following two saxophone excerpts. The second excerpt contains a problem in the digital audio conversion.

What is this problem called?

1 mark

- b. What is the cause of this problem?

1 mark

- c. Compare the following two vocal excerpts. The second excerpt contains a problem in the digital audio conversion.

What is this problem called?

1 mark

- d. What is the cause of this problem?

1 mark

Question 5

- a. The following vocal excerpt is in two parts.
Identify the type of signal processing applied to the second part.

1 mark

- b. The following vocal excerpt is in two parts.
Identify the type of signal processing applied to the second part.

1 mark

- c. The following vocal excerpt is in two parts.
Identify the type of signal processing applied to the second part.

1 mark

Question 6

The following music excerpt is in two parts.

Identify the type of processing applied to the second part. Tick (✓) the correct box.

- A. high pass filter
- B. data compression
- C. expanding/ducking
- D. pitch modulation

1 mark

Question 7

The following speech excerpt was recorded at an outdoor event. It contains unwanted noise.

- a. What is this type of noise commonly called?

1 mark

- b. Suggest two different ways you would minimise the noise.

1. _____

2. _____

2 marks

Question 8

- a. The following music excerpt is in two parts.

What aspect of the mix has changed in the second part?

1 mark

- b. The following music excerpt is in two parts.

What aspect of the mix has changed in the second part?

1 mark

- c. The following music excerpt is in two parts.

What aspect of the mix has changed in the second part?

1 mark

- d. The following music excerpt is in two parts.

What aspect of the mix has changed in the second part?

1 mark

Total 25 marks

END OF SECTION A

SECTION B

Question 1

A recording of a song is being encoded for uploading to the Internet so that others may download or play it on a wide range of computers and software.

- a. Provide two audio file formats that employ data compression that you would use to encode the song.

1. _____

2. _____

2 marks

Dave is bouncing a multitrack session in a Digital Audio Workstation (DAW) to a format that is suitable for burning to an audio CD.

- b. Of the following file types, which one must he choose?

Tick (✓) the correct box.

- | | |
|----------------------------|--------------------------|
| A. mono | <input type="checkbox"/> |
| B. split stereo left/right | <input type="checkbox"/> |
| C. stereo interleaved | <input type="checkbox"/> |
| D. Dolby AC3 | <input type="checkbox"/> |

1 mark

Question 2

- a. Assume a piano note A = 220 Hz.

What is the frequency two octaves above this note?

_____ Hz

1 mark

- b. Assume a guitar note A = 440 Hz.

What is the frequency two octaves below this note?

_____ Hz

1 mark

Question 3

What happens to an audio signal when we 'attenuate' it?

1 mark

Question 4

Imagine you are the sound engineer for a DJ playing dance music in a local nightclub. There are noise complaints from the neighbours in buildings across the road. You go outside to listen and you hear instruments in a particular frequency range but not others.

- a. Describe the frequency range you are likely to hear.

1 mark

- b. What adjustments to the PA settings could be made in order to minimise the loudness of any particular frequency range without turning down the master fader in the nightclub?

2 marks

Question 5

When turning off the power to a PA system or a recording studio control room, what piece of audio equipment is usually powered off first?

1 mark

Question 6

What is one potential disadvantage of performing a mixdown with a speaker system that incorporates a subwoofer that has not been correctly calibrated?

2 marks

Question 7

Give the full name of USB and DVD and explain the function of each in relation to digital technologies.

6 marks

Question 8

Imagine you are mixing the audio at a live theatrical performance. You hear the stage manager announce that the 'house has gone live' or the 'house is open' and the show will start in 20 minutes.

List three tasks you would perform, in your role as audiomixer, while the house is 'live' or 'open'.

1. _____
2. _____
3. _____

3 marks

Question 9

A single sound source is being recorded with two identical microphones, with the same settings on the mixer. The first microphone is two metres from the source, and the second microphone is four metres from the source.

- a. What is the difference in Sound Pressure Level (SPL) between the second microphone and the first?

_____ dB

1 mark

- b. What unwanted audible effect may occur when the output of the two microphones are mixed together?

1 mark

Question 10

List four different tests that would normally be performed when checking electrical and audio equipment and cabling for correct operation and Occupational Health and Safety, such as in a 'test and tag' procedure.

1. _____
2. _____
3. _____
4. _____

4 marks

Question 11

Explain 'dynamic range' in relation to audio terminology.

2 marks

Question 12

Christine copies a multitrack Digital Audio Workstation (DAW) project/session file from her computer to USB Flash drive. When she opens the file again on another computer using the same DAW system, she notices that there are no waveforms displayed, and the audio does not play. She has verified that both DAWs are functioning correctly.

What is the probable cause of the problems?

1 mark

Question 13

Imagine you are mixing at a medium-sized live venue, with one stage, and you are given the following running sheet for three live bands performing that night.

<p style="text-align: center;"><i>Running sheet</i></p> <p style="text-align: center;"><i>Support band 1: 8.00–8.30</i></p> <p style="text-align: center;"><i>Support band 2: 8.30–9.00</i></p> <p style="text-align: center;"><i>Main act: 9.00–10.00</i></p> <p style="text-align: center;"><i>Venue closes 10.00</i></p>

List three technical or logistical reasons why the times shown on the running sheet are potentially problematic.

1. _____
2. _____
3. _____

3 marks

Question 14

From the list below, identify the **four** devices most likely to require phantom power in order to operate. Tick (✓) the correct boxes.

- | | |
|---|--------------------------|
| A. dynamic microphone | <input type="checkbox"/> |
| B. mini lapel condenser microphone | <input type="checkbox"/> |
| C. active Direct Injection (DI) box | <input type="checkbox"/> |
| D. multicore | <input type="checkbox"/> |
| E. boundary/PZM microphone | <input type="checkbox"/> |
| F. passive DI box | <input type="checkbox"/> |
| G. Piezo pickup | <input type="checkbox"/> |
| H. graphic equaliser | <input type="checkbox"/> |
| I. large diaphragm condenser microphone | <input type="checkbox"/> |

4 marks

Question 15

- a. What is the correct sample rate and quantisation resolution for burning audio to CD?

Sample rate _____ kHz

Quantisation _____ bits

2 marks

- b. What is the maximum dynamic range in decibels (dB) for the following quantisation resolutions?

16 bit _____ dB

24 bit _____ dB

2 marks

Question 16

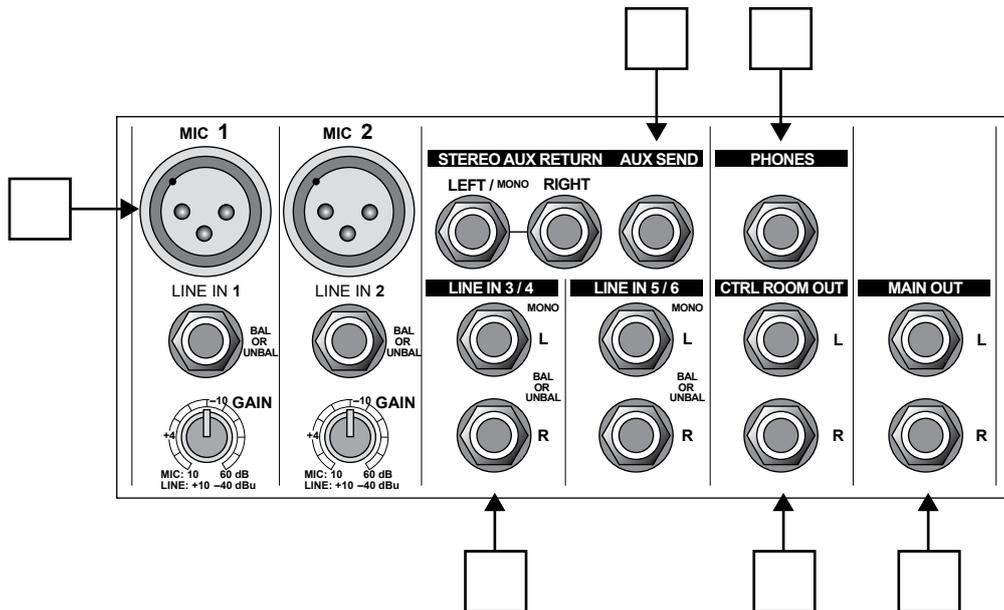
Without using spectrum analysers or automatic feedback eliminators, describe in detail the most common method of manually ‘ringing out a room’ in relation to equalisation (EQ) of a PA system.

3 marks

Question 17

The diagram below shows a typical input/output panel for a small mixing console. On the diagram, label from A to F where you would connect the following pieces of audio equipment.

- A. effects processor input
- B. stereo synthesiser
- C. studio monitors
- D. headphones
- E. microphone
- F. stereo recorder



6 marks

Question 18

From the list of microphones (1–8) provided below, select the most suitable for the following scenarios. Place the correct numbers in the corresponding boxes.

1. hand-held wired dynamic
2. large diaphragm condenser
3. ribbon – no pop shield
4. ‘shotgun’ long-range condenser
5. instrument dynamic
6. large diaphragm dynamic
7. small diaphragm lectern condenser
8. wireless lapel condenser

- A. amplifying a kick drum in a live band
- B. recording a vocalist in a recording studio
- C. amplifying a saxophone for a live band
- D. recording dialogue on a film location
- E. amplifying an actor’s voice in a theatrical musical

<input type="checkbox"/>

5 marks

Question 19

A recording session uses 7 gigabytes (GB) of storage space on a hard drive. At the end of the session it needs to be backed up.

- a. How many standard single-sided DVD-Rs would you need to back up the session?

1 mark

- b. How many 2 GB USB Flash drives would you need to back up the session?

1 mark

- c. How many standard CD-Rs would you need to back up the session?

1 mark

Question 20

A signal passes through a compressor and at the input it goes over the threshold by 10 dB.

- a. How many dB over the threshold is the compressor’s output if the ratio is 2:1?

_____ dB

1 mark

- b. How many dB over the threshold is the compressor’s output if the ratio is 5:1?

_____ dB

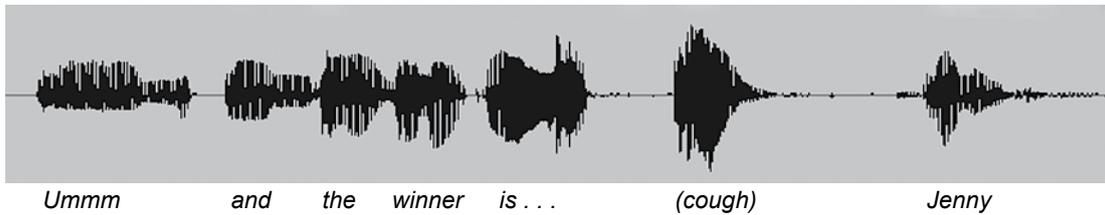
1 mark

- c. If the compressor’s ratio is set to 100:1, what is this commonly called?

1 mark

Question 21

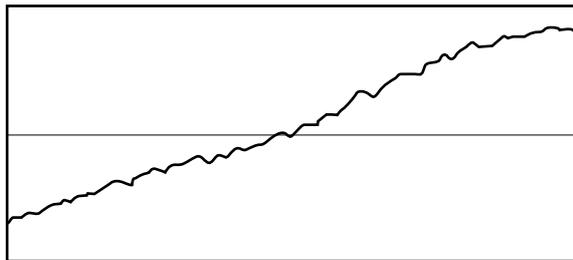
The audio region below shows a recording of a person speaking. The words are written underneath the region. There are some unwanted sounds in the recording.



- a. Using vertical lines, shade in the areas of the region you would edit in order to make the speech sound clean and natural.

2 marks

Examine the following diagram of an audio waveform.

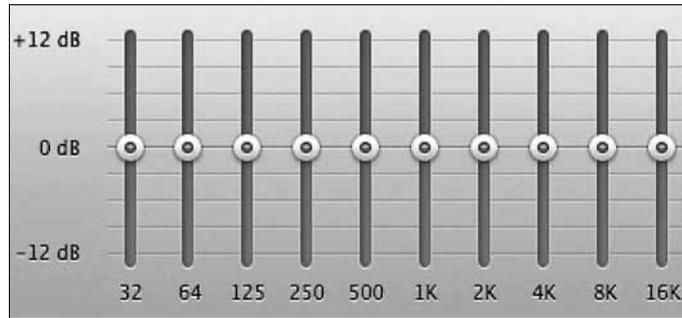


- b. Explain what unwanted sound might occur at the end of the waveform.

1 mark

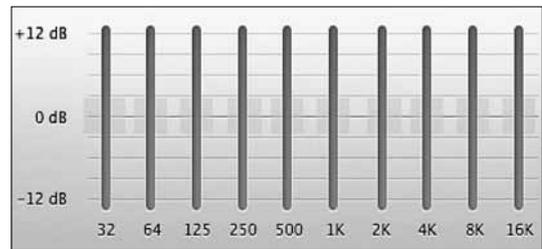
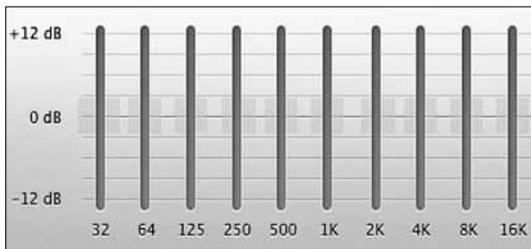
Question 22

The following picture shows a 10-band graphic equaliser (EQ) with sliders marked at the 'flat' zero position (0 dB).

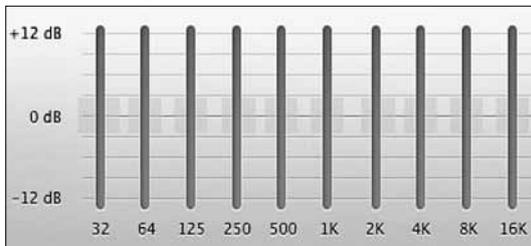


On the pictures below, draw notches/marks on the sliders to indicate an approximate EQ setting for the following conditions.

- A.** bass roll-off below 250 Hz with 6 dB per octave roll-off **B.** +6 dB shelf boost below 250 Hz and -6 dB shelf cut above 2000 Hz



- C.** notch filter-centre frequency 1 kHz boost +12 dB with 12 dB per octave roll-off



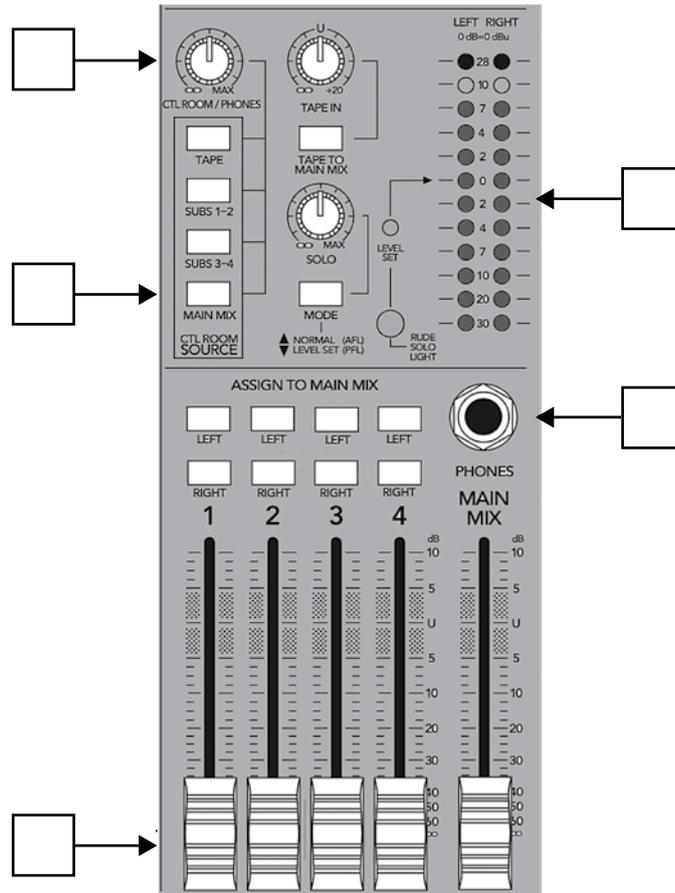
6 marks

Question 23

The diagram below shows the monitor section of a typical mixing console.

On the diagram, label (A.–E.) the following components.

- A. fader
- B. potentiometer
- C. level meters
- D. button
- E. socket



5 marks

Total 75 marks