VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

2013 VET Music (Technical Production) GA 2: Examination

GENERAL COMMENTS

Many students did well on the 2013 VCE VET Music (Technical Production) examination. However, areas for improvement included:

- terminology and its importance: the language used by many students indicated the need for further practice in articulating understanding of key concepts
- the relationships between various concepts: very few students had a good grasp of the various aspects and concepts as they relate to the understanding of the physics of sound or how basic electricity works
- aural understanding of processing and effects: few students could identify the difference between effects and processing used in Section A of the examination.

Students should be directed towards further revision and self-assessment, and are reminded that there are many tools available both on the VCAA website and other internet sites to assist with examination preparation.

SPECIFIC INFORMATION

This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

The statistics in this report may be subject to rounding errors resulting in a total less than 100 per cent.

Section A

Question 1a.–c.

Marks	0	1	2	3	Average
%	20	43	30	7	**1.3**

A small number of students were able to identify all waveform types.

1a.
Sine

1b.
Square

1c.
Pink noise

Question 2a.–d.

Marks	0	1	2	3	4	Average
%	15	20	14	27	25	**2.3**

Many students made good attempts to recognise the various frequencies.

2a.
125 Hz

2b.
500 Hz

2c.
1 kHz

2d.
4 kHz

Question 3a.–c.

Marks	0	1	2	3	Average
%	23	40	15	23	**1.4**

Many students recognised reverb but a significant number confused it with delay.

Many students did not know the names of the parameters or how altering these parameters affects the sound.

3a.
Reverb

3b.
Reverb time, room size

3c.
Extended time, hall reverb

Question 4a.–b.

Marks	0	1	2	Average
%	15	46	39	**1.3**

Most students noted the dip (dropout) in volume. Many students identified a process but didn't explain how they would use post-production processes.

4a.
Dropout

4b.
Riding the fader and/or automate the compressor to even out the sound levels

Question 5

Marks	0	1	Average
%	50	50	**0.5**

Fade in, automated gradual increase in volume

Question 6

Marks	0	1	Average
%	43	57	**0.6**

Phase/chorus effect

Question 7

Marks	0	1	Average
%	5	95	**1**

Distortion

Question 8a.–c.

Marks	0	1	2	3	Average
%	28	58	4	11	**1**

8a.
Delay

8b.
Delay feedback

8c.
Delay feedback has been extended (lengthened).

Question 9a.–b.

Marks	0	1	2	Average
%	35	41	24	**0.9**

Few students were able to recognise what they heard or knew how to articulate how the effect was created.

9a.
Low-pass filter

9b.
The frequencies have been swept.

Question 10a.–e.

Marks	0	1	2	3	4	5	Average
%	5	11	20	25	23	15	**3**

Most students seemed to have good listening skills and many identified the changes correctly.

10a.
Guitars attenuated; grungy guitar has been removed

10b.
Vocal harmony has been removed.

10c.
Reverb has been added to the drums.

10d.
The lead vocal has been double-tracked.

10e.
Various delays have been added to the drums.

Section B

Question 1

Marks	0	1	Average
%	20	80	**0.8**

The panorama or pan pot knob allows an input to be placed in a specific position across the spectrum of a stereo mix. It also allows for a signal to be assigned to a group if the group function is selected.

Most students were able to explain the function of a pan pot knob on a mixing desk.

Question 2a.–b.

Marks	0	1	2	3	Average
%	18	21	22	39	**1.8**

Some students were able to say what the high-pass filter allowed through, but the examples for the uses of the high-pass filter were poor. Students need to be aware of the use of the high-pass filter to cut out low frequencies and that it is not a tool for reducing spill from other instruments.

2a.
The high-pass filter removes unwanted bass frequencies.

2b.
The high-pass filter

- gives a clearer vocal sound
- removes wind noise
- reduces background noise, such as microphone-handling noise
- removes plosives
- allows for creative EQ possibilities.

Question 3a.–c.

Marks	0	1	2	3	4	Average
%	15	23	31	24	8	**1.9**

Students' understanding of the use of groupings was reasonable, but many students were not aware of the use of the pan pot to assign to a group on an analogue desk.

3a.
When a channel is assigned to a group it passes a signal to the group faders before reaching the main mix. For example, many inputs such as drum microphones may be more easily manipulated as a group.

3b.
The pan pot needs to be set to the left or the right.

3c.
The 48 V button may be needed to provide power for the

- condenser microphone
- active DI box/unit.

Question 4

Marks	0	1	Average
%	10	90	**0.9**

C. multicore

Question 5a.–c.

Marks	0	1	2	3	4	Average
%	9	21	22	29	19	**2.3**

Only about half of the students knew why a balanced signal is important. It was concerning that a significant number of students believe that frequencies, rather than voltage, travel down a cable.

5a.
Negative effects on the sound quality might be

- signal loss
- noise interference.

5b.
A DI box

5c.
The DI box will balance the unbalanced input.

Question 6

Marks	0	1	Average
%	56	44	0.5

An Australian GPO can deliver 2400 watts.

Question 7a.–d.

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	1	1	1	3	6	9	12	19	22	16	8	7

Most students were not aware of how to check a power cable and many suggestions were irrelevant.

7a.
Any two of the following answers were acceptable.

- Visually inspect the cable.
- Feel the cable for nicks or cuts.
- Look for the current test-and-tag label.
- Make sure the cable is free of dirt, tape, glue or anything that may impede visual inspection.

7b.
Any three of the following answers were acceptable.

- Use earplugs (hearing protection).
- Move away from the sound source.
- Take regular breaks.
- Set up sound equipment correctly.
- Equalise the sound system correctly.
- Set volume levels to '0' before switching on.
- Do a line level check.
- Turn amps on last.

Most students were aware of how to look after their hearing, but answers such as 'make sure sound levels don't exceed 85 dB' were unrealistic for the scenario noted.

7c.
Power boards help to keep the stage tidy and reduce tripping hazards.

Most students appreciate the use of power boards for keeping the stage tidy.

7d.
Any four of the following answers were required for full marks.

- channel number
- gain setting
- type of microphone/DI box
- short/tall stand
- requirement for a boom stand
- different drums in kit (use of specific microphones/types)
- instrument assigned
- name of microphone model/brand
- notes field on documentation for special requirements

Many students misunderstood this question. They noted important aspects of microphone characteristics (such as polar patterns), but these are not part of a microphone input sheet for a gig.

Question 8

Marks	0	1	Average
%	23	77	**0.8**

D. 3.5 mm stereo jack

Question 9

Marks	0	1	2	Average
%	30	35	34	**1.1**

Dennis should first turn off the powered studio monitors or amplifier to protect the speakers and his hearing.

Most students were aware of the need to turn the speakers off first, but many did not understand that turning off the speaker is actually turning off the amplifier in the powered speaker, and this is what is important. Many students were not aware of why this is important. A number of students correctly talked about the 'pop', but many talked about blowing up equipment or a power surge that could destroy it.

Question 10a.–c.

Marks	0	1	2	3	Average
%	5	12	25	57	**2.4**

Students were aware of the purpose of the EQ for removing feedback, but many couldn't articulate how to use the EQ.

10a.
C. a graphic equaliser

10b.
Find offending frequencies and lower/remove them.

10c.
Low-pass filter

Question 11a.–c.

Marks	0	1	2	3	Average
%	57	15	16	11	**0.8**

Most students were not aware that bit depth relates to dynamic range and sampling rate relates to frequency.

11a.
Either of

- it enables greater headroom to be left on recording without encountering quantisation errors at low volumes
- there is a greater dynamic range.

11b.
48 kHz

11c.
Nyquist

Question 12

Marks	0	1	Average
%	13	87	**0.9**

D. an active 3-way crossover

Question 13

Marks	0	1	2	3	4	Average
%	2	1	7	24	66	**3.5**

Four of

- tech riders for all bands

- sharing requirements of backline equipment
- a stage manager to ensure bands stay to time
- clear patch lists
- organisation of backstage space
- contact details
- good stage crew
- foldback requirements for each band
- stage plan for each band
- start and finish time of the event
- changeover time allowance.

Question 14

Marks	0	1	2	Average
%	38	49	13	**0.8**

To avoid (two of)

- dimmer noise in the audio system
- the risk of musicians damaging equipment by plugging in to dimmed power
- overload of a circuit
- leads overheating.

Most students were unable to explain why audio power cables and dimmed-lighting power cables should be kept separate. Many students thought that lighting power is a different type of power. However, this could lead to a very dangerous situation.

Question 15

Marks	0	1	2	Average
%	55	25	20	**0.7**

Any two of

- roll-off bass
- consider boosting 2 kHz and add more lows (if using SM57)
- add more highs if using a kick-drum microphone
- cut lows/boost highs (for example, a high-pass filter).

Question 16

Marks	0	1	Average
%	81	19	**0.2**

To avoid earth/ground loop hums (or 50 Hz hum)

Most students didn't refer to avoiding ground/earth hum; most talked about connecting both mixer and stage audio to the same power circuit to ensure that if the power went down on one, it went down on all, and the sound technician would know when something went wrong. Further improvement is needed in this area.

Question 17

Marks	0	1	Average
%	51	49	**0.5**

B. a hanging choir microphone

Question 18a.–b.

Marks	0	1	2	3	4	Average
%	35	26	13	10	16	**1.5**

Even though the question clearly stated 'Identify the frequency range', most students referenced specific frequencies rather than the relevant bands.

18a.
woofer: mid (200 Hz – 2 KHz)
horn: highs (2 KHz – 20 KHz)
subwoofer: lows (20 Hz – 200 KHz)

18b.
Highs treble or 2 KHz – 20 KHz

Question 19a.–b.

Marks	0	1	2	3	Average
%	53	24	17	6	**0.8**

It was evident that most students have had very little experience with latency. Most students were unable to articulate what the term referred to or what could be done to reduce it.

19a.
Latency is the difference between real-time audio and computer audio playback (lag between input and output).

19b.
Any two of

- adjust playback/CPU settings
- monitor record inputs in real time
- decrease buffer size
- rendering of files
- reduce plugins
- close other programs running.

Question 20

Marks	0	1	Average
%	53	47	**0.5**

PAD-20 dB means a 20 dB cut in the input level.

Question 21a.–b.

Marks	0	1	2	Average
%	51	29	20	**0.7**

Most students were not able to give the function of the threshold knob on an audio compressor.

21a.
It determines the level at which the compressor begins to compress.

21b.
Either of

- limiter
- brick wall.

Question 22

Marks	0	1	Average
%	44	56	**0.6**

C. a PZM boundary microphone

Question 23

Marks	0	1	2	Average
%	47	34	19	**0.7**

Two of

- a low dynamic range
- lots of loudness
- digital artefacts

- removes the bottom end
- reduction in frequency range.

Most students know what happens with file conversion and noted the process rather than saying how it affected what they actually heard. Students need to listen to recordings of differing qualities, then listen to the same piece on CD, mini disk, MP3 or vinyl and compare what they hear.

Question 24a.–b.

Marks	0	1	2	Average
%	27	19	54	**1.3**

Many students named crossfade but most could not explain it correctly. Common incorrect responses were ducking and fade in–fade out.

24a.
It is called a crossfade.

24b.
It could be used (one of)

- for blending between tracks or songs
- as a DJ tool
- for smoothing separate takes in a recording
- for smoothing an edited audio section.

Question 25a.–b.

Marks	0	1	2	3	Average
%	34	38	9	19	**1.1**

Most students recognised that the system required more than one GPO/circuit.

25a.
One 240 volt GPO would not be enough because Jim would only have 10 amps available. With 11 amps, the circuit would break or trip.

25b.
A passive system, as amplifiers would be protected under cover

Most students weren't able to identify a passive system. Most suggested a light active system that could be moved easily or a waterproof system.

Question 26

Marks	0	1	Average
%	30	70	**0.7**

Any of

- electrics in the amplifier could burn out
- a fire may start
- other electrical components in the amplifier would be damaged before the fuse blew
- electrical safety.

Some students did not understand the physics of what was happening and what a fuse actually does. Many talked about the circuit not handling the higher rating of the fuse, but few made the connection that the fuse protected the inner workings of the guitar amp.

Question 27

Marks	0	1	2	Average
%	57	10	33	**0.8**

Problem: A post-fader auxiliary has been selected
Fix: Selecting the pre-fader auxiliary

Most students did not identify post-fade as the problem and pre-fade as the solution. Many students suggested disconnecting the output from the FOH and putting it through a channel.

Question 28

Marks	0	1	2	Average
%	29	40	31	**1**

Two of

- reduce the chance of feedback
- have an optimal S/N ratio
- if gain structure is too hot, changes are imperceptible
- if gain structure is too low, there is not enough signal to drive tone networks and channel volume
- enable system to operate at unity gain.

Many students weren't aware that gain is about the pre-amp boosting the input signal to line level. Most students talked about volume and blowing up amplifiers/speakers but these are output issues.

Question 29

Marks	0	1	Average
%	9	91	**0.9**

Any valuable equipment accompanied by an appropriate explanation, possibly with reference to road cases, organising equipment of a similar type and equipment of a fragile nature, was accepted for full marks.

Question 30

Marks	0	1	2	3	Average
%	14	28	29	29	**1.7**

Three of

- enables more efficient use of studio time by identifying problems beforehand
- 'consolidates' communication skills
- allows time for changes/modifications to songs
- it is cheaper to hire a pre-production studio, where all instrument or performance problems can be solved in an atmosphere where the vibe isn't as important.

Question 31

Marks	0	1	2	3	4	Average
%	4	13	25	34	24	**2.6**

Four of

- damp the skin
- re-tune the snare drum
- EQ the microphone
- move the microphone
- apply a noise gate
- triggered sound
- change to another snare drum
- compress the sound.

Most students gave good ideas for fixing the ringing tone, but many gave one-word answers that didn't explain how the method would rectify the problem. Many students did not give a reason why the snare was ringing and what was required to address this across a number of options.