2018 VCE VET Music Industry: Sound Production examination report

General comments

Overall, students performed very well on the 2018 VCE VET Music Industry: Sound Production examination.

However, 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. Students should understand basic acoustics.

Students who did well in Section A could identify the difference between effects and processing. However, some students used terms not considered appropriate at this level. Students are reminded that this study is a technical study and accordingly their responses should be of a technical nature.

Students are encouraged to complete further revision and self-assessment. Past examinations and audio examples, available on the VCAA website, may be helpful to students in their 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 resulting in a total more or less than 100 per cent.

Section A

Question 1a.

Marks	0	1	Average
%	32	68	0.7

No bass; bass muted/removed

Question 1b.

Marks	0	1	Average
%	16	84	0.9

No guitar; guitar muted/removed

Question 1ci.

Marks	0	1	Average
%	14	86	**0.9**

Snare

Question 1cii.

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

Reverb

Question 1ciii.

Marks	0	1	Average
%	84	16	**0.2**

Pre-delay

Question 2a.

Marks	0	1	Average
%	46	54	**0.6**

Sounds roomier or bigger, more space, acoustic reverb, ambient, less full, fewer lower frequencies, more natural reverb, proximity effect

Question 2b.

Marks	0	1	Average
%	40	60	**0.6**

Location of mics – close or distant, muting the close mics and unmuting the overheads or room mics, using room mics

Students' listening skills were generally good.

Question 3a.

Marks	0	1	Average
%	35	65	**0.7**

Toms 2 and 3

Question 3b.

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

Spill; bleed

Question 3c.

Marks	0	1	2	Average
%	32	46	22	**0.9**

Mute or delete unwanted audio, add gate/expander, automate tracks, edit strip silence (students needed to have both 'strip' and 'silence'). Strip spill was accepted but strip toms was not. Volume attenuation was also acceptable.

Students who answered this question well did not just state the DAW function but explained how they would use the function.

Some students who did not answer this question well often referred to re-recording or using functions that did not remove the unwanted signals. Many also selected the incorrect tracks.

Question 4a.

Marks	0	1	Average
%	59	41	**0.4**

Sound cutting in/out, sound buzzing, crackling not popping

Question 4b.

Marks	0	1	Average
%	33	67	**0.7**

Check lead/cable, check connections, check stage box

Responses such as replace the mic or swap the channels were incorrect as both were functioning normally in the scenario.

Students who did well in this question were very clear with the words they used to describe the audio. They described what they heard rather than saying what the problem was. Some students confused the problem with what was causing the problem. Students need to read questions very carefully.

Students who did not score highly for this question confused the types of sound they heard – buzzing is not humming, etc. Many also gave poor options for fixing the problem.

Question 5a.

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

Pitch correction, Auto-Tune, Melodyne, vocal synth

Question 5b.

Marks	0	1	Average
%	63	37	**0.4**

Correct bad notes/wavering pitch/deviations from reference point (scale/specific notes), tuning, pitch, intonation, frequency

Students who scored well recognised the effect and were able to correctly name it.

Responses that indicated that it sounded more processed were not awarded the mark.

Students who did not answer this question well suggested effects that would not have produced this sound.

Question 6a.

Marks	0	1	Average
%	82	18	0.2

Time stretched/expanded

Question 6b.

Marks	0	1	Average
%	41	59	0.6

Duration, slowed down, lengthened

Responses such as ‘made words longer’ were awarded the mark.

Question 7

Marks	0	1	Average
%	40	60	0.6

Reverse, reversion

Question 8a.

Marks	0	1	2	3	Average
%	9	20	32	39	2

1. 250 Hz

2. 4 kHz

3. 500 Hz

Question 8b.

Marks	0	1	Average
%	30	70	0.7

Play frequency through system to match input and output, use spectrum analyser, balance the system components, use as a reference for identifying feedback frequencies, check monitors are functioning on full range. An operation was required to justify adjustments.

‘Ring out frequencies’ was unacceptable.

Some students were not able to give a useful reason for frequency identification when tuning a PA system.

Question 9

Many students were able to identify the noise excerpts but were unsure of how to use the noise in a set-up.

Question 9a.

Marks	0	1	2	Average
%	23	3	75	1.5

First part: white noise

Second part: pink noise

Question 9b.

Marks	0	1	Average
%	39	61	0.6

Need to EQ a room, tune a PA system, check PA system coverage/dispersion, confirm the components of a speaker system are operating, check signal path

Section B

Question 1

Marks	0	1	2	Average
%	37	32	31	1

Equipment: shock mount, mic cradle, basket

Function: isolate mic from vibrations from ground/stand, prevent handling noise, to adjust position of mic

Students who answered this question well gave the correct name and the purpose for its use in relation to isolating the microphone from floor vibrations.

Students who did not answer this question well used the incorrect name and/or indicated that it stopped all vibrations from being picked up.

Question 2

Marks	0	1	2	3	4	5	6	Average
%	21	14	20	14	10	9	12	2.6

Symbol	Function	Application
O	omnidirectional	close mic'ing without proximity effect, ambience when needing to capture sounds from all directions, chorus booth, multiple sources at once
80	rolloff below 80 Hz, HPF (at 80 Hz)	eliminate vocal plosives/hum/rumble/unwanted low frequencies
–5	minus 5 dB, attenuate 5 dB, pad	so the mic can handle a higher SPL, if the sound source is overloading the mic, reduce level

Students who answered this question well gave a practical application.

Many students who did not answer this question well often just defined the function and struggled to provide an appropriate application.

Question 3

Marks	0	1	2	3	4	Average
%	41	4	31	2	23	1.6

Advantages:

- has cable phase inversion leading to stronger signal and cleaner sound
- less noise/hum/interference
- allows phantom power for the mic, which some mics need
- allows for longer cable runs/distance

The response needed to be an advantage, not just a description.

Students who scored well for this question had a good understanding of the components of a balanced cable and gave good examples of advantages.

Question 4a.

Marks	0	1	2	Average
%	81	3	16	0.4

Difference: dispersion pattern
Soft dome tweeters: more dispersed, wide high or treble dispersion
Horn tweeters: more directional, narrower, long throw dispersion, high frequencies may not be heard depending on tweeter angle

Question 4b.

Marks	0	1	2	Average
%	16	70	14	1

Tweeter: soft dome

Justification: do not want directionality in studio, smoother frequency response, wider dispersion to higher frequencies, almost no high-frequency resonance, much lower distortion than other tweeter

Students who responded well had a good understanding of the workings of various types of speakers.

Question 5a.

Marks	0	1	2	3	4	Average
%	38	15	21	10	17	1.6

Audio compression: limits/reduces dynamic range, which minimises differences between soft and loud

Data compression: reduces file size and the amount of data, which lowers the fidelity/quality of audio transferring WAV file to MP3

Students who answered this question well defined audio compression as affecting dynamic range, and data compression as reduced file size and lower quality. The students who did not answer this question well gave irrelevant answers or sometimes just quoted text from the question.

Question 5b.

Marks	0	1	2	Average
%	57	18	25	**0.7**

Waveform: top set, Set 1

Characteristics: louder

Students who answered this question well recognised the normalised track and explained the increase of volume before clipping.

Question 6

Marks	0	1	2	3	Average
%	39	16	15	30	**1.4**

Proximity effect refers to the increased bass response at close distances (or thinner at greater distances) of a directional pattern microphone. An audible increase in the bass frequency as the sound source is closer, increases close-up device – cardioid/directional/unidirectional mic.

Students recognised that this effect related to a dynamic cardioid microphone and to the bass frequency response. Students who did not answer this question well gave responses relating to mixing desks and other devices.

Question 7a.

Marks	0	1	Average
%	22	78	**0.8**

Reverb, PCM91

Question 7b.

Marks	0	1	2	Average
%	42	16	42	**1**

Distressor, EL8-X

Example: poor vocal technique, poor mic technique, increased gain

Students needed to say more than ‘compress’ as this was not a correct answer.

Question 7c.

Marks	0	1	Average
%	14	86	**0.9**

Equaliser, DN370

Students who responded well were able to recognise the parameters of the various devices and correctly identify the relevant device for the task.

Question 8a.

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

- eliminate/remove feedback among certain frequencies

- tonal adjustments
- hum eliminator
- isolated transformer

Students who answered this question well realised that the question was asking for action during a performance and gave responses relating to feedback, creative uses or giving sonic space for various instruments. Students who did not answer well suggested things like ‘tuning the room’, which would have been done prior to the live performance.

Question 8b.

Marks	0	1	2	Average
%	66	9	25	**0.6**

Use a noise gate or expander with appropriate threshold above the buzzing but below the instrument level.

Students who responded well identified the appropriate function to deal with this issue as well as the relevant setting. Students who did not answer well used functions such as EQ which, at best, would only minimise the sound or functions that would affect other tonal qualities of the performance.

Question 9

Marks	0	1	2	3	4	Average
%	0	3	23	8	67	**3.4**

- number of members to decide inputs required
- instruments/equipment to decide equipment required
- live or with overdubs to know how to capture sound
- purpose to know demo or release quality
- budget to allocate time
- when to check availability
- special requests to hire additional gear
- genre to decide equipment required
- list of songs

Students who responded well gave good examples of documents needed from the band and why it would assist them in their planning. Students who did not answer well often gave information that would be decided by the recording engineer (for example, how many tracks, rather than listing the instruments) or they only nominated the information without explaining how it assists the engineer.

Question 10

Marks	0	1	2	3	4	5	6	7	8	Average
%	1	4	11	9	11	10	19	18	18	5.3

Microphone/DI box	Musician(s)	Justification
stereo pair of cardioid small diaphragm condensers	choir	can be directed to minimise spill; can deliver a stereo spread of the choir; condensers can deliver a flat, life-like sound; good detail for voices; sensitive Two mics will pick up a wider soundfield.
large diaphragm cardioid dynamic	double bass	directional to reduce spill from other instruments; large diaphragm good for low frequencies
handheld cardioid dynamic	lead vocal	directional so reduces spill; can position close to sound source for better separation; vocalist can exploit proximity effect; vocalist can control volume through distance from mic; allows free movement for vocalist, holding the mic is not sufficient on its own More robust than the other mics.
DI box	acoustic guitar	No spill; cleaner; DI brings guitar pickup output up to line level

Students who responded well recognised that they were given the specific properties of each microphone and used at least one of these properties to justify the choice of the microphone for the instrument. Students who did not answer well ignored these qualities and used justifications such as 'handheld is good for the vocalist'. The reasoning for using the DI with an acoustic guitar was often poor.

Question 11

Marks	0	1	2	3	4	Average
%	43	8	15	17	17	1.6

Step 1: place mic in position

Step 2: raise volume/level until feedback occurs

Step 3: use graphic EQ to identify frequency and attenuate it

Step 4: repeat for the next frequency

Students who responded well started with the correct placement of a microphone. Students who did not respond well gave various responses that often had more to do with a sound check. A large number of students also suggested using a CD or track; this is appropriate for eq'ing but ringing out cannot be done with a CD.

Question 12a.

Marks	0	1	Average
%	56	44	0.5

- horn diaphragm; driver
- tweeter

Horn was an appropriate response but horn flare was not accepted.

Question 12b.

Marks	0	1	Average
%	65	35	**0.4**

85 dB SPL

Question 13a.

Marks	0	1	Average
%	57	43	**0.5**

EQ, low-cut filter, high-pass filter, HPF, LF EQ

Students who answered well recognised that wind was a low-frequency issue that could be minimised with a suitable filter on an EQ. Students who did not answer well suggested noise gate and other devices that would have affected other qualities of the performance. Some students suggested pop socks; while this is a good solution it is not a function of the mixing desk.

Question 13b.

Marks	0	1	2	Average
%	15	25	60	**1.5**

Difference: where the sound is heard
Sound check: instruments/mics sent to FOH/PA and a balance is achieved, confirm PA is working at performance levels
Line check: input patching, confirms signal path is functioning

Students who responded well correctly noted that the line check was about signal flow and sound check was about the mix. Students who did not respond well confused the two or gave ambiguous responses.

Question 13c.

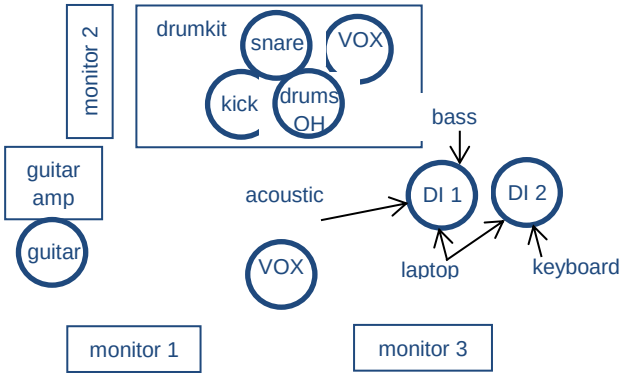
Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	2	1	1	4	2	7	14	15	18	20	18	7.4

Mixer channel label	Input type	Acts			
		Solo vocalist	Five-piece band	DJ	Three-piece band
kick	inst. mic	–	drums (kick)	–	drums (kick)
snare	inst. mic	–	drums (snare)	–	drums (snare)
drums OH	inst. mic	–	drums (whole kit)	–	drums (whole kit)
guitar	inst. mic	–	electric guitar	–	electric guitar
DI 1	DI	–	keyboard	laptop R	–
DI 2	DI	acoustic guitar	electric bass	laptop l	electric bass
VOX 1	vocal mic	singer	singer	–	–
VOX 2	vocal mic	–	–	–	singer

Question 13d.

Marks	0	1	2	3	4	5	6	7	8	9	10	11	Average
%	2	1	2	4	3	7	7	13	15	24	16	5	7.5

An example is shown below:



Students who responded well were meticulous in following the instructions and working with the equipment list.

Students who did not respond well often did not place all the instruments on stage, placed monitors in poor positions (for example, in front of a drumkit) or used more equipment than what was supplied.

Students are reminded to read and attempt to understand all given information before responding.