2021 VCE VET Music Industry: Sound Production external assessment report

General comments

2021 was challenging for students participating in studies of a primarily practical nature. However, students performed to a high standard in the 2021 examination. Most students did well in this examination.

Some students seemed to have difficulty with the concepts and terminology associated with this study. These concepts should be revised regularly for students to grasp fully at Units 3 and 4.

In terms of the relationships between concepts and principles, few students demonstrated a grasp of the various aspects as they relate to the understanding of the physics of sound at this level or how basic electricity works.

In Section A, most students had a good understanding of what they were listening to, although some students had difficulty understanding the difference between an effect and a process. The study of sound production is technical, so students' answers should be of a technical nature. Students are encouraged to use correct terminology and technical language accurately and avoid describing a process or an effect in random terms with no technical credibility.

Students incorrectly used the following words interchangeably:

- feedback and foldback
- frequencies and waveform
- frequencies and SPL (sound pressure level)
- frequencies and volume/gain
- dynamic mic and dynamic range (few students seemed to understand the difference in the meaning of the term 'dynamic' in mic operation).

In Section B, most students were able to identify the functions and controls on the mixing console, although some students may need more practice time with these pieces of equipment.

Teachers should encourage students to supplement their exam preparation with participation in real-life practical situations, such as setting up school assemblies; music, drama or theatre studies assessments; and concerts, plays and musicals. Participation in practical tasks will help reinforce the correct terminology and practice of running cables, being aware of electricity and other safety issues.

Specific information

Note: 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

Students' responses to Section A were a balanced mix, showing that students are listening well.

Question 1a.

Marks	0	1	Average
%	8	92	0.9

Drums/kit/percussion tracks have been soloed in the second part of Excerpt 1a.

Question 1b.

Marks	0	1	Average
%	6	94	0.9

Verb/reverb has been added to the snare in the second part.

Question 1c.

Marks	0	1	Average
%	13	87	0.9

The function of this unmuted track is to enable performers to play in time / to allow for grid-type editing / metronome (not timer).

Question 1d.

Marks	0	1	Average
%	90	10	0.1

Keys / electric piano / pad / piano element has been muted in the second part of Excerpt 1d.

Question 1e.

Marks	0	1	Average
%	64	36	0.4

Compression effect has been applied to the drums in the second part.

Question 2a.

Marks	0	1	Average
%	23	77	0.8

Delay/echo has been applied to the second part of Excerpt 2a.

Some students confused reverb with echo/delay.

Question 2b.

Marks	0	1	Average
%	73	27	0.3

In the second part of Excerpt 2b., the parameter of time / delay time has been altered in the effect.

Question 2c.

Marks	0	1	Average
%	62	38	0.4

In the second part of Excerpt 2c., the parameter of feedback/regen/decay/repeats has been altered in the effect.

Question 3

Marks	0	1	2	3	4	Average
%	5	7	15	22	51	3.1

Track	Rhythm	Pitch	Rhythm and pitch
Synth pad		X	
Shaker	X		
Acoustic guitar			X
Creaking floorboards	X		X

Question 4a.

Marks	0	1	Average
%	31	69	0.7

Editing option B results in a better audible outcome because only the click is removed / it sounds natural / you can't tell that it was edited / there is a smooth transition.

Question 4b.

Marks	0	1	2	Average
%	19	48	33	1.1

The two editing actions that have been taken in editing option B are fade applied and click deleted / strip silence.

Many students only gave half the answer.

Question 5

Marks	0	1	2	Average
%	31	6	63	1.3

In the excerpt of a multitrack recording that has been mixed, the second and third parts have each had the following types of filter sweep applied:

- Part 2, HPF or High Pass Filter
- Part 3, LPF or Low Pass Filter.

Question 6a.

Marks	0	1	Average
%	28	72	0.7

The unwanted audio is called feedback.

Many students confused foldback with feedback.

Question 6b.

Marks	0	1	2	Average
%	17	30	53	1.4

Any two of the following:

- turn down PA
- equalise (EQ) out the feedback frequency
- reposition the mic
- reposition the speaker
- select a more directional mic.

Question 6c.

Marks	0	1	2	Average
%	26	44	30	1.0

Explanation: A DI box may be a better option because the pick-up would mainly 'hear' the sound of the guitar and not the PA / reduce spill / cleaner sound / signal direct to PA.

Item: The correct item is the pick-up.

Question 7a.

Marks	0	1	Average
%	50	50	0.5

Possible actions that could be taken to improve the quality of the audio in the second part include:

- move closer to the mic
- don't be so far from the mic
- use a headset/lapel/handheld mic.

Question 7b.

Marks	0	1	Average
%	70	30	0.3

Any one of the following types of sound can be heard in the second part, other than the voice:

- room sound
- echo
- reverb
- reflections
- background noise
- air-conditioning
- signal to noise ratio
- noise floor (not bleed-spill).

Question 7c.

Marks	0	1	Average
%	22	78	0.8

Possible actions that could be taken to improve the quality of the audio in the third part include:

- move further away from the mic
- reduce the mic input level in the meeting
- app settings / software.

Section B

Question 1

Marks	0	1	2	3	4	5	6	7	8	Average
%	7	1	4	11	19	24	22	9	3	4.6

Any two applications for each type of microphone:

Type of microphone	Applications
Calibrated test microphone	- scientific measurement / acoustic assessment - legal/environmental measurement - SPL measurement - system tuning/equalising/testing - not line check - not sound check
Hand-held dynamic	- mic instruments or vocals in a high-SPL environment – loud sound sources - mobile singer/voice/sound source - speeches - appropriate instrument (high SPL) - on-stage performance
Pencil condenser	- consistent polar pattern and transient response – excellent for percussion, acoustic instruments, detail and realism - often used in stereo pairs - drum overhead - non-amplified/acoustic sound source - appropriate instrument (incl. percussion)
Large diaphragm dynamic	- for bass instruments - kick drum - bass amp - picks up lower frequencies - appropriate instrument

Many students had difficulty reading frequency response charts and polar patterns.

Question 2a.

Marks	0	1	Average
%	62	38	0.4

One of the following.

- to be familiar with the sound of the speakers or mixing room and how that might impact on the mix
- to match the characteristics (or frequency response/balance) of the familiar track.

Students generally answered this question well.

Question 2b.

Marks	0	1	Average
%	78	22	0.2

One of the following.

- to avoid skewing/distorting the frequency response or balance of the mix (Fletcher-Munson / loudness curves)
- to avoid hearing fatigue.

Question 3

Marks	0	1	Average
%	66	34	0.3

Pre-delay increased/mix/wet-dry mix.

This question showed a depth of knowledge, although not many gave the correct answer.

Question 4

Marks	0	1	2	3	4	5	Average
%	36	11	13	13	13	14	2.0

Control	Function
Attack	Adjusts the amount of time that it takes for the compressor to start acting after the input signal exceeds the threshold level.
Release	Adjusts the amount of time that the compressor will take to stop affecting the sound after the input signal falls below the threshold.
Threshold	Adjusts the level that the input signal must exceed before the audio is compressed.
Ratio	Controls the amount of compression expressed as a ratio of 'input level' to 'output level change'. The higher the ratio knob is set, the more the output level will be reduced as the sound goes beyond the threshold. The amount of compression.

Control	Function
Makeup	Increases or attenuates the overall output level of the compressed sound, compensating for the gain reduction (note: both pieces of information required).

This question was not answered well, showing that despite students experimenting with equipment, they did not necessarily retain the information.

Question 5

Marks	0	1	Average
%	81	19	0.2

Any one of:

- frequency range/response
- high frequency
- Nyquist frequency
- Frequency.

Question 6a.

Marks	0	1	2	3	Average
%	3	13	35	49	2.3

Any three of:

- twists may mean that insulation is compromised
- test sticker is no longer valid and/or illegible
- tape may obscure damage
- no collar on female plug
- no insulation on pins
- lead overheated causing twisting
- inappropriate wrapping causing damage
- trip hazard.

Question 6b.

Marks	0	1	Average
%	51	49	0.5

Replace cable with a safe one, **not** test and tag.

Many students see the test and tag process as the end of the line, which isn't always the case.

Question 7

Marks	0	1	Average
%	68	32	0.3

Phantom power is not on.

Question 8a.

Marks	0	1	2	Average
%	22	30	48	1.3

Either of the following.

- No – The audience will have no effect on the feedback because the source of the problem is not the empty hall.
- No – The problem is from the stage area, not the hall.

Some students described how each accessory around the mic worked, but put the response against the wrong part of the question. Students are reminded to read the questions carefully.

Question 8b.

Marks	0	1	2	Average
%	6	16	78	1.7

Yes, because the audience will absorb much of the reflected sound.

Question 9

Marks	0	1	2	3	Average
%	4	2	16	78	2.7

Any three of:

- indoors or outdoors
- venue size/layout
- access or stairs for load in and load out
- power availability
- existing system or equipment installed, if any
- venue capacity
- any other performers
- genre of music
- space for equipment
- any other information that would impact the choice of hired equipment.

Most students scored highly on this question.

Question 10a.

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	1	2	4	6	9	13	16	17	19	9	3	6.1

Students were asked to provide a probable cause and solution for each problem noticed by the sound engineer during a performance.

Problem	Probable cause	Solution for this cause
Every time the vocalist sings, they back off from the mic and have an uncomfortable look on their face.	Monitor too loud or is feeding back.	Any one of: • reduce level of singer's monitor • EQ out the feedback frequency • reposition equipment
The band's stage volume is reaching dangerous levels.	Any one of: • foldback is too loud • band member(s) playing too loud	Any one of: • reduce foldback level • ask band member(s) to turn down
The bass is routed through a DI. The bass drops out of the PA and the on-stage bass amp during the performance.	Any one of: • faulty lead, fault with the bass, bass volume pot is down • lead disconnected • DI battery fall • faulty DI	Any one of: • replace lead • replace bass • turn bass up • reconnect lead • replace battery • replace DI
The singer takes their mic from the stand and when they move around there is a crackling sound in the mix.	Any one of: • lead is loose • lead is faulty • mic is faulty	Any one of: • check connection with microphone • replace lead • replace mic
The trombone player and the trumpet player are sharing a microphone and the trumpet player cannot be heard.	The trumpet player is off axis or is too far away from the microphone (**not** Polar pattern)	Any one of: • move the microphone stand so it is closer and pointed towards the trumpet player • reposition the players to balance the sound • setup a second mic (**not** figure 8 mic)

Students generally answered this question well.

Question 10b.

Marks	0	1	2	Average
%	8	17	74	1.7

Any two of:

• Is the volume/SPL too high?
• Is the band too loud?
• Are the high frequencies too loud/piercing?
• Is the problem with offensive performance/language?

Question 11a.

Marks	0	1	2	3	Average
%	14	6	18	62	2.3

A range of acceptable answers are possible as long as the equipment involves audio signal and is in the correct order. For example, any one of:

- mic, cable, interface
- mic, cable, pre-amp
- DI, cable, desk
- keyboard, DI, interface.

Students gave a range of answers, most of which were acceptable.

Question 11b.

Marks	0	1	2	3	Average
%	11	4	18	67	2.4

A range of acceptable answers are possible as long as the equipment involves audio signal and is in the correct order. For example, any one of (must be able to be connected in sequence):

- mic, desk, speaker
- mic, cable, desk
- cable, desk, speaker
- mic, cable, speaker
- mic, amp, speaker (this response only achieved two marks, as the amp and speaker are integrated in an active PA system).

Students scored highly on this question.

Question 12a.

Marks	0	1	2	3	4	5	Average
%	0.5	1	0	6	20	73	4.6

Any five of:

- audio interface / sound card
- microphone
- mic pre-amp
- cables
- microphone stand
- mixing desk
- headphones
- headphone amp
- pop shield
- monitors/speaker
- absorption panel or similar
- stage box
- patch bay.

Students scored highly on this question.

Question 12b.

Marks	0	1	Average
%	22	78	0.8

The voice-over studio could be made less reverberant by any one of:

- microphone isolation panels
- treatment of space to reduce reflected sound / acoustic panels
- absorption panels
- carpet
- soft furnishings
- rugs, etc.

'Acoustic treatment' on its own was not acceptable.

Many students seem to have not read the question carefully and referred to post-production correction.

Question 13a.

Marks	0	1	Average
%	83	17	0.2

The expected average SPL measurement after the volume is doubled would be 60dB.

Students seemed to have little or no understanding of SPL.

Question 13b.

Marks	0	1	Average
%	94	6	0.1

The approximate increase in SPL would be 3dB (or 3).

Question 13ci.

Marks	0	1	Average
%	10	90	0.9

The feedback occurs at approximately 1kHz.

Most students scored highly on this question.

Question 13cii.

Marks	0	1	2	Average
%	7	34	59	1.5

Any two of:

- turn it down
- apply EQ
- graphic EQ
- change mic position
- change speaker position
- remove the feedback frequency
- use a feedback eliminator
- tune PA.

Very few students used the correct terms of direct sound, late and early reflections. Room acoustics is an area for improvement.

Question 13d.

Marks	0	1	Average
%	77	23	0.2

The correct answer is delay.

Question 14a.

Marks	0	1	Average
%	52	48	0.5

The correct answer is insert or any insert.

Question 14b.

Marks	0	1	Average
%	48	52	0.5

The correct answer is two.

Question 14c.

Marks	0	1	Average
%	22	74	0.8

Circle around/on the ZED FZ buttons numbered 1–16 and/or the SEL buttons. For example:
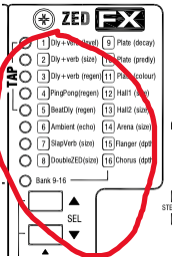
Question 14d.

Marks	0	1	Average
%	46	54	0.5

Any one of:

- HPF
- remove frequencies below 100Hz
- bass filter
- rumble filter
- pop filter.

Question 14e.

Marks	0	1	Average
%	74	26	0.3

Adds fx return to either the foldback or AUX1 or AUX2 busses.

Question 14f.

Marks	0	1	Average
%	46	54	0.5
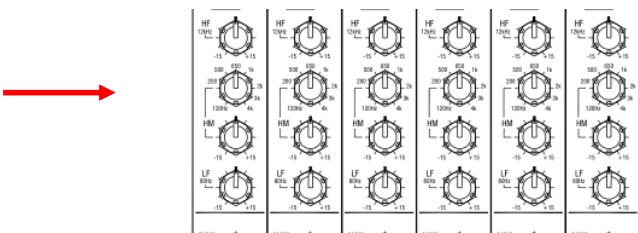
Arrow must point at any of the 6 knobs in the second row as indicated here.

Question 14g.

Marks	0	1	Average
%	61	39	0.4

Either of:

- switches phantom on/off to all mic input channels
- phantom cannot be operated on channels individually.

'Throughout the system' is incorrect.

Question 14h.

Marks	0	1	2	Average
%	20	42	38	1.2

Any two of:

- condenser mic
- active DI
- acoustic guitar with built-in DI.

Question 14i.

Marks	0	1	Average
%	76	24	0.2

To set/alter/change the delay time / tempo / tempo of FX.

Question 14j.

Marks	0	1	Average
%	50	50	0.5

Either of:

- allows listening to a channel in headphones
- allows for individual metering.

Question 14ki.

Marks	0	1	Average
%	94	6	0.1

AUX3 out (just AUX3 was accepted).

Question 14kii.

Marks	0	1	Average
%	54	46	0.5

Any ST in or ST RTN/2TRK RTN.

Question 14l.

Marks	0	1	Average
%	84	16	0.2

Any one of:

- no direct outs
- no individual outs
- USB is only 2 channels.

Question 15

Marks	0	1	2	Average
%	82	12	7	0.2

Audible change 1: audio would playback faster (speed).

Audible change 2: audio would playback higher / higher pitch (pitch).

Students generally did not score well on this question.