Practice Paper 2
SECTION A

> Points in italic are for A Level only

Question 1

Charlie Parker: 'Ornithology'

*a. A (1)

*b. i. Acceptable answers:

Hammer noise/pedal noise (1)

Distortion (1)

Spill from headphones (1)

Control of ambience (1)

Phase problems/stereo image (1)

[max. 3 marks]

ii. Cut/reduce volume of low frequencies (1)

Cut/reduce volume of high frequencies (1)

Band pass filter/(semi-)parametric EQ to remove high and low frequencies (1)

High shelf cut (1)

Low shelf cut (1)

Allow: high pass filter (1)

[max. 2 marks]

*c. Acceptable answers:

One mark is awarded for each point/process (max. 2) with a further mark for an explanation of the point (max. 2).

Use EQ/filtering	To alter the frequency range to compensate for the lack of low/high frequency content or to add clarity to different parts e.g. saxophone/piano
Use a high pass filter/EQ/ de-noiser	To reduce hum/rumble
Use a low pass filter/EQ/ de-noiser	To reduce hiss
Use compression	To make the overall track louder (reference to overall volume, not individual parts)
Use compression	To reduce the dynamic range
Use a stereo spreader/stereo reverb	To enhance the stereo image/add stereo to a mono recording

Question 2

Crowded House: 'Don't Dream It's Over' (1986)

*a. Delay (1)

Chorus (1)

(Light) distortion/overdrive (1)

[max. 2 marks]

*b. i. High gain to achieve good signal to tape/signal-to-noise ratio when recording onto the tape (1) Leave little to no headroom (1) Drive the tape a little to ensure good level (1)

[max. 1 mark]

ii. Unused tracks (e.g. bass) muted in introduction (1)

Reduces the number of tracks producing hiss in the mix (1)

*c. Tremolo arm/whammy bar (1)

*d. C (1)

e. Acceptable answers:

Increases rate (1) and depth (1) of modulation (1)

Allow: more (1) modulation instead of rate/depth

Vibrato/chorale/tremolo/rotary (1)

Leslie speaker (1)

Drawbars opened up (1)

More harmonics/high frequencies (1)

[max. 3 marks]

Question 3

Jean-Michel Jarre: 'Oxygene Part II' (1976)

*a. i. Tape delay (1)

Bucket brigade delay (1)

ii. Bus send from mixing desk channels (1)

Overdub each instrument with delay applied, maintaining same settings (1)

*b. White noise (1) sweeps (1)

LFO (1) with changing rate (1)

Both effects control low pass (1) filter (1) cut off frequency (1) and are *resonant* (1)

Both effects rise and fall/increasing and decreasing rate and/or cut off (1)

[max. 6 marks]

Question 4

Massive Attack: 'Angel' (1998)

*a. i. D (1)

    ii. Acceptable answers:

      Percentage quantise (1)

      Iterative quantise (1)

      Include/exclude (1)

      [max. 1 mark]

*b. Acceptable answers:

Time reference	Use of stereo field
0'09" – 0'13"	Delayed percussion/click sound panned L (1)
0'50" – 0'54"	Stereo effect on guitar/stereo reverb (1)

*c. Acceptable answers:

One mark is awarded for each point (max. 3) with a further mark for an explanation of the point (max. 3).

Bass/electronic snare have no reverb	Opening is very dry (0'00")
Delayed signal has more reverb/fades into the distance by reducing high frequencies	Spot effects make sounds more distant (0'10", 0'38")
Guitar feedback has more reverb along with background FX	Background sounds are further back in the mix than the instruments, which creates a sense of space (1'00")
Longer decay time on the vocal reverb/ higher send amount	Lead vocal is more ambient (1'08")

SECTION B

Extended response mark schemes

Remember, the extended response and longer answer mark schemes in this book contain what we call 'indicative content'. This means that the answers given are not exhaustive, and that the examiner will also give credit for points that are valid but that are not listed in the mark scheme.

There are further practice questions in the *Rhinegold Education A Level Music Technology Revision Guide,* and the AS Level edition, along with model answers and guidance on improving your work.

*Question 5

Nancy Sinatra: 'Bang Bang (My Baby Shot Me Down)' (1966)

Audio Bullys: 'Shot You Down' (2005)

Total for AS Level: 16 marks – AO3 8 marks, AO4 8 marks

Total for A Level: 15 marks – AO3 5 marks, AO4 10 marks

Marking instructions

Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Responses that demonstrate only AO3 without any AO4 should be awarded marks as follows:

AS Level:

- Level 1 AO3 performance: 1-2 marks
- Level 2 AO3 performance: 3-4 marks
- Level 3 AO3 performance: 5-6 marks
- Level 4 AO3 performance: 7-8 marks.

A Level:

- Level 1 AO3 performance: 1 mark
- Level 2 AO3 performance: 2 marks
- Level 3 AO3 performance: 3 marks
- Level 4 AO3 performance: 4 marks
- Level 5 AO3 performance: 5 marks.

Content shown below is for AS and A Level. Content specific to A Level only is shown in italics.

Indicative content guidance

The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3	AO4
Capture and instrumentation	
Nancy Sinatra version is captured using microphones/ Audio Bullys version is sequenced in a DAW	The Nancy Sinatra would have been recorded live, whereas the Audio Bullys version would have been sequenced in a DAW, using the vocal samples from the original, and recording more vocal samples. The original creates a 'live' feel by using only vocals and electric guitar with little overdubbing and processing. There is less hiss on the Audio Bullys version as it has been recorded digitally (audible at the start of each track). Digital recording has a greater signal-to-noise ratio than analogue tape. Sometimes hiss is used as a creative effect (see below, audible at the start of the remix), whereas in the original, it is a product of the recording process. The hiss on the remix is used to cover up the hiss of the original and to make it sound 'lo-fi'
There is no synthesis in the original; electric guitar and vocals/Audio Bullys version adds synthesiser layers and a new synthesiser bass line, with a number of synthesiser effects	The electric instruments/synthesisers in the remix could either have been recorded using DI techniques, or could have been DAW plugins. Both of these techniques would minimise unwanted noise in the mix. The instrumentation is indicative of each track's style; the original as a pop ballad and the remix as electronic dance music
Unwanted hiss and restricted frequency range is present in the original	The remix has more high and low frequency content; this is indicative of mixing trends in the 2000s when it was produced, compared to the restricted frequency range in the original, which is lacking these frequencies (most audible when comparing the start of the original with around 1'24" in the remix)
Sampling	
The Audio Bullys version repeats the word 'down' and uses it as a sample leading into the chorus Other single words are sampled from the hook 'Shot me down' is used as a sampled hook in the remix	The remix is sequenced and makes use of both longer samples that are similar to the Nancy Sinatra version, and heavily edited samples where single words and phrases are repeated to create build ups and breakdowns. In the remix, these short vocal samples are used to create rhythmic effects ('down' – 1'24" onwards) whereas in the original the melody line uses a melodic and rhythmic hook ('bang bang' – 0'24"). The sample of 'down' is cut harshly in the remix and it clicks. Zero crossing editing or fading would remove this, but it might lose some rhythmic impact. Samples of gunshots (0'45") are used in the remix to reflect the lyrics of the original, and as rhythmic devices

Effects	
In the original an electric guitar is used with a tremolo effect	Tremolo is used on the electric guitar throughout the original, and this forms part of the sample in the remix. In the 1960s the tempo could not be tempo synced to the timing of the vocal; this is possible using the modern technology in the remix
Reverb is applied to the vocals in the original	The ambience in the original is inconsistent. The guitar part is quite dry whereas the vocal has lots of reverb (0'12"), whereas the Audio Bullys version mostly has more contemporary treatment of reverb/ambience. However, as the sample is taken from the original, the reverb is still present on the vocal (0'57")
The Audio Bullys remix uses delay as a creative effect	Some of the samples (e.g. gunshots) have timed delay applied (for example 0'45", with a *high level of feedback*). These create interesting rhythmic effects
The guitar and vocal in the original are panned left/central respectively	The panning in the original is unconventional and indicative of early stereo technology, whereas in the remix, the guitar's polarised panning is not present and vocal and guitar sit central (more conventional/contemporary standards – 0'46"). DAW technology enables greater control of the stereo image and effects/processing to use it creatively
There is more compression/a narrower dynamic range in the Audio Bullys remix	The sequenced drums in the remix are heavily compressed, which makes sure that the transients cut through the mix, as appropriate to an electronic dance style. There are no drums in the original track. Compression is prominent in the remix, giving a punchy dynamic/pumping (1'24") . The average volume of the remix is louder; this is indicative of the 'loudness wars' in music
In the remix, distortion is added to the samples from the original	There is an audible difference between the quality of the recording in the remix. This is used as a creative effect (e.g. hiss at start, sample at 0'46"). It is used to make the samples seem more 'retro'/to acknowledge they are old. Before we hear the vocal for the first time, hiss appears and disappears (0'56"). This is used to 'prepare' us for the sound of the sample from the Nancy Sinatra song. The sections are very different, and this is amplified rather than integrated, with a clear divide between the samples and the new material

The AS Level and A Level levels based assessment grids are given on pages 50-51.

Question 6 (A Level only)

Daft Punk: 'One More Time' (2001)

AO3 (5 marks)/AO4 (15 marks)

Marking instructions

Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Responses that demonstrate only AO3 without any AO4 should be awarded marks as follows:

- Level 1 AO3 performance: 1 mark
- Level 2 AO3 performance: 2 marks
- Level 3 AO3 performance: 3 marks
- Level 4 AO3 performance: 4 marks
- Level 5 AO3 performance: 5 marks.

Indicative content guidance

The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3	AO4
Compression to even out dynamic range/avoid distortion	Electronic instruments have a narrower dynamic range than acoustic instruments. Acoustic instruments therefore tend to need more compression in the mix. Vocals in this mix are heavily compressed to help them cut through the mix. It is very easy to change the amount of compression applied to any part, and the effect is relatively easy to add or remove/non-destructive
Too much compression/ over compression can cause ducking on the mix	Sidechain compression is used creatively throughout the mix, with the kick drum creating a 'ducking' or 'pumping' effect across the mix. This is a characteristic feature of electronic dance music. It is particularly audible on the horn and pad parts around 0'47", and is stylistic to electronic music, providing rhythmic movement. Settings used to create this particular compression would need to be a low threshold and relatively high ratio, with quick attack and release. 'Peak' mode works more effectively than RMS. In this track the horns and pad(s) duck quickly in response to the kick drum four-to-the-floor pattern (e.g. 1'34"). Use of attack/release can help to make the music push forward or drag. A badly judged release time can destroy the rhythmic drive of a song. The sidechain compression does not cause this track to drag, so the attack and release times are well set. Artists such as David Guetta used sidechain gating and compression creatively, to create synthesiser lines and ducking effects from percussion rhythms/drum parts
Modern music is heavily compressed, which makes it seem louder overall/limiting Volumes of album tracks can be matched using mix compression/ limiting	A brickwall/∞:1 limiter at end of chain prevents clipping/going above threshold peaking at around -0.1dB to -1dB to allow headroom. There is a trend that masters are getting louder; this means they have less dynamic range and they stand out on radio. This is increasingly important when recordings are played on small/phone speakers. It is beneficial for low quality streamed audio to have a smaller dynamic range. Streaming became more popular from the late 2000s onwards as internet speeds increased. Listeners are used to hearing louder tracks, which means that producers aspire to do this, or compare their mixes to commercial masters to ensure comparable levels. 'Loudness wars'. Streaming services such as Spotify can automatically match the loudness of different tracks to maintain a comparable playback level. This means that streaming is reversing the trend of loud masters as track volumes are increased or decreased based on an average level, so a song with quieter sections might ultimately play back louder than a consistently loud master

Can be applied using plugins or hardware equipment	Compressors can be used as hardware units; producers have often favoured hardware compressors that can apply compression at a master stage. DAWs also come bundled with compressors and multiple instances of these can be used on one track. DAW plugins sometimes emulate hardware compressors and gates. Classic mix compressors/with valves/warm sound, e.g. Teletronix LA-2A
Noise gating to remove noise/ quiet sounds	In some electronic dance styles, gates can be sidechained/keyed gate to create synthesiser rhythms from drum/percussion parts etc. Silence is used in various places in the track, where parts drop out and the texture changes, so it is important that any quiet noise is removed (e.g. 0'59", 1'29"). The scissor tool could also be used to remove noise for greater control

The A Level levels based assessment grid is given on page 53.

*Additional practice Question 5

Pink Floyd: 'Another Brick In The Wall, Pt. 2' (1979)

Eric Prydz, Floyd: 'Proper Education' (radio edit) (2007)

Total for AS Level: 16 marks – AO3 8 marks, AO4 8 marks
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AO3	AO4
Capture	
Original captured using mics and recorded live on analogue multitrack tape	A choir is recorded in the original (1'05"); multitracking could have been used to layer up a smaller group of singers to create this effect. *You could use an XY pair/coincident pair/other stereo mic technique to do this.* Layering lots of recordings could mean that the hiss builds up on the multitrack recording. The remix has less noise than the original because it uses a DAW/digital technology
Remix is faster than the original	Remix is faster than the original; the lead vocal and sampled guitar parts are time stretched to play them faster. This would be achieved now on a DAW, which means that pitch and time can be independently controlled. In the late 1970s when this track was originally released, it would have been achieved using tape, which would affect both pitch and time. The faster tempo in the remix makes the song more appropriate for the electronic dance music style and for dancing to
Live/recorded vocal in the original	The vocal stem part from the original is used to form the vocal for the remix. It is mostly used in order, with some phrases repeated or used in different places, particularly in the build up around 2'22". The use of the vocal stem in mostly the same order in the remix gives a clear musical link to the original
Sampling	
Original uses some sampled sound effects; these would have been recorded and replayed on tape	Sound FX used in original; created from tape-based sounds (playground noise, phone ringing at end 3'20" onwards). These are not reproduced in the remix, but small fragments of audio from the original are used and manipulated with spot effects (e.g. the delay/reverb on 'alone' at 2'57" and 'education' at 3'08" which is repeated and high pass filtered). The manipulation/processing of fragments of vocal from the original gives a musical sense of build in the remix
The remix is built upon a vocal stem from the original, along with parts of the guitar	The verse in the remix uses primarily new synthesised parts against the vocal stem file. At the beginning, some samples of the original are used, but these are removed gradually as the piece progresses, leaving mostly new synthesised parts and providing further opportunities for textural build in these parts. The new material is therefore further developed rather than simply relying on the original loop. This is a stylistic feature of electronic dance music and remixes, and, at the end of a track, can also facilitate mixing into the next song. The chorus brings some of the original guitar parts back. This maintains a strong link to the original track, and emphasises a catchy chorus hook