

**MUSIC TECH REVISION**

**COMPONENT 3  
PRACTISE PAPERS**

**MARKSCHEME**

## SECTION A

Answer ALL questions in both sections .

1. The Chainsmokers :Don't Let me Down <https://youtu.be/qMH0Xglh7GA>

a. Describe how EQ processing has been applied to the guitar part between the beginning and 0.12 seconds, also which effect is used to create space during this time.

1. Hi cut / low boost / top frequencies cut

2.Reverb (2)

b. How does the guitar part change at 0.36 seconds (1)

Drops an octave.

c. What effect is used on the vocal phrase 'right now' at 0.42 seconds (1)

Timed delay / tap delay/ ping pong delay

d. What rhythm does the kick drum play at 2:12. (1)

Quavers

e. What part of the vocalists performance is included to add a more human touch

breaths before each phrase (1)

f. State four reasons why this track could not have been recorded in the 1950's

1 use of synthesisers

2. drum machines / drum samples

3. Automated effects / modern reverbs / multi tracking

4. Pitch bends / timed delay / autotune / electric guitar effects (4)

**(Total for question 1= 10 marks)**

2. A-Ha : Take On Me

<https://youtu.be/djV11Xbc914>

a. What is the tempo of this song

(2)

169 bpm ( accept 155 to 180 )

b. The main riff is played on a DX7 AND a Juno 60. How would these two instruments have communicated.

(2)

Via MIDI / midi cables .

c. What are the missing chords under the main riff from 0. 20 seconds

(2)

B minor7 / E / A / D C #minor 7

d. What vocal technique does the singer use at the end of the chorus.

(2)

Falsetto / head voice

e. What form do the backing vocals take on the chorus.

1. Harmonies 2. Call and response 3. double tracking

(2)

(Total for question 2 = 10 marks)

**3. Howlin'Wolf : Smokestack lightning**

<https://youtu.be/9Ri7TcukAJ8>

**a. This track was recorded in 1959. Explain two characteristics that support this.**  
(4)

No overdubs, acoustic instruments, no synths, live feel, loose rhythms, lack of distinction in parts.

**b. This track was recorded live with one microphone. Explain three modern techniques that could create a more contemporary sound.**  
(6)

better mic placement, more use of effects, record separate parts, wider frequency range,  
more dynamic processing, overdub any mistakes, mastering, gating, compression.

**(Total for question 3 = 10 marks)**

#### 4. The Beatles: In My Life

<https://youtu.be/-eCh3y5VROM>

**a. This track was recorded on four tracks . Explain the process of recording more parts within these limitations.**

(4)

Bouncing down : record on four tracks, mix and bounce down to one then record on remaining three mix and bounce down to track two etc.

**b. The piano solo at 1:30 was too difficult to perform at the time. What recording technique was employed to aid the performer. How could you replicate this using modern technology. (6)**

Tape slowed to half speed, recorded and then sped up. Slow track tempo / time shift / draw in using MIDI / sequence performance.

**(Total for question 3 = 10 marks)**

**(Total for question 4=10 marks) Total for section A = 40 marks**

## Section B

5. The Knife : Heartbeats

<https://youtu.be/jcU7gmU1-WQ>

Jose Gonzalez : Heartbeats

<https://youtu.be/4-liyr-Xq3E>

**Compare the different production and performance techniques used in the two versions. (20)**

Original : sequenced performance, synthesisers, drum machines/synth, affected vocal, double tracking of voice, layering of keyboard parts, up beat dance feel, electronic style, eq sweeps, synthesised hand claps, filters, timbale, steel drum sound, automated panning.

Cover : acoustic, emotional vocal performance, double tracked vocal, intimate recording, close mic'd guitar, folk feel, limited use of effects, natural production, sparse arrangement.

**(Total for Question 5 = 20 marks)**

## 6. Tone Loc : Wild Thing

**This track relies heavily on audio sampling. Briefly describe the process and its impact on modern music.** <https://www.youtube.com/watch?v=5bNHDppTwlk> (15)

recording audio signal at 44.1 khz. Can be manipulated /pitch shifted/ time stretched/ copy and pasted. Create a new song from small sample giving rise to Hip Hop and dance music. Layering of samples to create soundscapes, new sonic palette , use of vocal hooks as instruments, samples of drum loops eg James Brown, most modern music uses sampling in some form or another. used in rock to create consistent drum hits. Orchestral/ethnic samples as cheaper alternative. Famous use of sampling Rappers delight-Chic, Run DMC - My sharona, Kanye - Ray Charles, M.I.A. -The Clash. Madonna -Abba, Robbie Williams - Barry White.

**(Total for Question 6 = 15 marks)**

**Total for section B = 35 marks**

**Total for paper = 75 marks**

## SECTION A

Answer ALL questions in both sections .

### 1. The Buggles : Video Killed the Radio Star

a. Name 2 production processes that have been used on the lead vocal in the first verse. (2)

1. Compression.
2. EQ.

b. What instrument plays at 0:09 seconds. (1)

Fretless Bass

c. How has the 'far away' feel been achieved on the backing vocals at 2:34. (1)

Wide Reverb, wet increased original signal set low

d. On the outro, a second backing vocal is layered over the first by the same singer. What is this technique called. (1)

Multi tracking or overdubbing

e. Unusual for the eighties, which percussion instrument is mixed prominently at 0:34 seconds.

Bass drum, Kick drum (1)

f. State four reasons why this track could not have been recorded in the 1950's

Use of synthesisers, sequencers, fretless bass, hi gain guitar, extensive multitracking, various different effects on vocal parts, electric bass, good production quality, Synth drums, use of delay.

(4)

**(Total for question 1= 10 marks)**

Produced by Malcolm Escott  
www.musictechstudent.co.uk



## 2. Blondie : Heart of Glass

a. Which elements of disco are incorporated into this track (3)

drum machine, sequencer, synths, octaves in bass part, open/closed hi hats on offbeats, 4/4 dance beat

b. How are the vocals thickened on the chorus (2)

lead vocal double tracked with second voice an octave lower

c. What gives the first instrumental break (2:00) its unusual feel. (2)

It goes into 7/4 for first three bars. Alternates between 4/4 and 3/4.

d. This track was recorded before MIDI. What does MIDI stand for and how could it have been used

On the sequencer and drum machine parts. (3)

Musical Instrument Digital Interface. Sync the sequencer and drum parts together.

Quantise them to tighten rhythms.

(Total for question 2 = 10 marks)

### 3. Rocket 88 : Ike Turner/Jackie Brenston

a. This track was recorded in 1951. Explain two characteristics that support this. (4)

Chamber reverb/ slapback echo has been used on vocals . The recording is mono (1) as only one track tape was available (1) . No effects other than reverb (1) as they had not been invented until the 1960s (1) some of the instruments sound distant (1) due to limited number of microphones (1). Surface noise present (1) due to vinyl consumer format. (1) double bass used (1) because the bass guitar was not widely used.

b. Explain three processing techniques that could be applied during mastering to give this song a more contemporary sound. (6)

Apply EQ (1) to cut low-mid muddiness/to apply a loudness curve/make bass instruments thicker (1) apply high pass filter (1) to remove plosives on vocals in breaks (1) • automated de-esser/dynamic EQ/automated EQ (1) on the vocal to remove sibilance (1) • mix compression/multi-band compression/brickwall limiter (1) to give a higher average level/reduce dynamic range (1) • stereo widener/reverb (1) to give a simulated stereo field (1) • noise reduction/audio restoration (1) to remove unwanted noise and hiss.

(Total for question 3 = 10 marks)

### 4. The Beatles: Strawberry Fields Forever

a. The introduction features a Mellotron. Explain how a Mellotron worked . (4)

The Mellotron had a bank of magnetic audio tapes inside, each lasting approximately eight seconds and containing a range of pre-recorded sounds. This was triggered by the keys on the keyboard.

b. What problems may you have encountered using a Mellotron and what could you use today to achieve a similar effect. (6)

Flutter and speed variations on the tapes, pitch wobble, dissonance when playing chords.

A sampler, loaded samples, Vst technology, synthesis, preset sound banks.

(Total for question 4=10 marks)

**Total for section A = 40 marks**

Produced by Malcolm Escott  
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## Section B

### 5. Pink Floyd : Comfortably Numb

#### Scissor Sisters : Comfortably Numb

Compare the different production and performance techniques used in the two versions.  
(20)

Original: live recording of rhythm section, mainly acoustic instruments, spoken style vocal

(Sprechgesang) use of timed delay, early synth sounds, different lead vocalists, strings, rhythmic

pushes, epic and wide sound production, extended instrumental sections, recorded to tape,

vocal harmonies, voice used for effect (scream), progressive rock leanings in arrangement (6:53).

New version: Falsetto vocal, timed delay, compressed drum machine, muted guitar sample, synth

drums for fills, faster tempo, hi hats on offbeat, sequencer, rhythmic pushes in instruments but

drums maintain solid beat in dance style , simplified arrangement, no instrumental breaks,

(Total for Question 5 = 20 marks)

## 6. Van Halen : I'm the One

The electric guitar has come a long way. Name the various effects, innovations and techniques in

this song that confirm it could not have been recorded in the 1950's  
(15)

Use of phaser, delay, hi gain distortion/fuzz. Humbucking pick ups for reduced hiss, locking

tremolo system (Floyd Rose), lighter string gauges, smaller frets, more accurate intonation, lighter

bodies , cut away's for higher neck reach. Dive bombs, harmonics, trills, tapping, palm muting,

tremolo picking, whammy bar tricks, legato runs, hammer ons, pull offs.

**(Total for Question 6 = 15 marks)**

**Total for section B = 35 marks**

**Total for paper = 75 marks**

# THE BEATLES - I FEEL FINE

## Answers:

1. Feedback (1 mark).
2. Major ( G major) ( 1 mark).
3. Blues, rock and roll. ( 1 mark).
4. The fifth, the dominant, D major (1 mark).
- 5 .a. (1 mark).
6. b. ( 1 mark).
7. Sliding (1 mark).
8. George Martin (1 mark).
9. B D F# = B minor C E G Bb = C 7 (2 marks).
10. Four (1 mark).
11. Bouncing down. Record parts to tracks one, two and three then bounce these down to track four freeing tracks one, two and three. Repeat this process. (3 marks)
12. Once bounced, those tracks are unable to be altered. There all keepers!  
(2 marks)

**16 marks**

## SECTION A

Answer ALL questions in both sections .

1. Bon Jovi : It's My Life

<https://youtu.be/vx2u5uUu3DE>

a. What effect is used on the guitar on the intro. (1)

Talk Box

b. What does this effect use to modify the guitar sound. (2)

Typically, a talk box directs sound from the instrument into the musician's mouth by means of a plastic tube adjacent to their vocal microphone. The musician controls the modification of the instrument's sound by changing the shape of the mouth, "vocalizing" the instrument's output into a microphone.

c. What is the interval between the lead and the high harmony on "It Out Loud" at 0:55 seconds. (1)

1. Octave    2. Perfect Fourth    3. Minor second    4. Minor sixth

d. How has the piano sound on the intro been treated. (2)

Hi Cut, low cut, mid boost, panned right.

e. How does the drummer add momentum to the end of the song from 3:45 (2)

Doubles ride/crash cymbal to every crotchet beat.

f. The vocals have a wide dynamic range. What would you use to ensure the quieter verses don't get lost in the mix. (2)

Compressor, compression, boost signal on verse, cut on chorus,

**(Total for question 1= 10 marks)**

2. Christina Aguilera : Beautiful

<https://youtu.be/eAfyFTzZDMM>

- a. When close mic'ing a Cello, what problem should you watch out for (2)

Proximity effect, boom from bass notes.

- b. What is the best type of microphone to capture all aspects of the instrument (2)

Omni directional

- c. At 3:43 you can hear the click track. Why is this and how could you ensure it doesn't happen. (4)

Bleed from headphones. Ensure both are firmly on head, lower volume.

- d. Why is a click track so much more important in modern recording than in the 1950's. (2)

Rhythm section was recorded live, enables use of grid in DAW, allows quantising, parts recorded separately today.

**(Total for question 2 = 10 marks)**

3. Big Country : In A Big Country

<https://youtu.be/Sk5SkiBna24>

a. What World music influence can be heard in this track. (1)

1. Flamenco    2. Gamelan    3. Scottish Folk    4. Calypso

b. This track was recorded in 1983. Give four examples to support this statement. (4)

- \* Gated reverb,
- \* drum samples,
- \* multi tracked, separate parts,
- \* hi gain guitar, phaser, pitch shifter automated effects.

c. What technique is employed by the clean guitar part at 1:37 seconds. (1)

Palm muting.

d. This track was recorded on analogue tape. Give four reasons why ADAT would have been better. (4)

Greater frequency response, wider dynamic range, lower signal to noise ratio, less track bleed, no motor issues (wow and flutter) easy syncing with other devices.

**(Total for question 3 = 10 marks)**



4. The Animals: We Gotta Get Out Of This Place

<https://youtu.be/LUpBSvN1a50>

a. Name four instruments featured in this song.

(4)

Guitar, bass, drums, organ, keyboard.

b. The vocals are prominent in this mix. What problems could you have recording them and how could you overcome them using modern technology.

(6)

- \* Plosives - Pop shield
- \* Dynamic range - Compression, normalising
- \* Sibilance - de-esser
- \* Pitch problems - Autotune, pitch correction
- \* Performance problems - Copy and paste
- \* Low frequency noise - High Pass EQ filter

**(Total for question 4=10 marks)**

**Total for section A = 40 marks**

## Section B

*Please note: For the AS Music Technology Component 3 - Listening and Analysing exam, students only need to answer question 5.*

5. Cornershop : Brimful of Asha

[https://youtu.be/IM7H0ooV\\_o8](https://youtu.be/IM7H0ooV_o8)

Cornershop (Fatboy Slim Remix) : Brimful of Asha <https://youtu.be/a0BkP5HDWj0>

Compare the different production and performance techniques used in the two versions.

(20)

Original, 110 bpm, live instruments, slow laid back feel, indie, limited effects, limited dynamic processing, tambourine used to liven chorus,

Remix 126 bpm, track sped up giving everything a brighter tone, breaks added after chorus, samples added, drum samples, synth licks added, wider range of dynamics, sampled drum break

Focus on verse/ chorus, main vocal sampled, wider use of effects.

**(Total for Question 5 = 20 marks)**

## 6. Madonna : Future Lovers

This song features heavy use of filters. Outline the difference between High pass, low pass, notch and band pass filters.

(15)

Low Pass Filter is conceived to leave intact the frequencies below the cut-off frequency and attenuate all other frequencies above it. It also called a high-cut filter sometimes.

High Pass Filter is the opposite to the previous one. The high-pass filter is conceived to leave intact the frequencies above the cut-off frequency and attenuate all other frequencies below it. It also called a low-cut filter sometimes.

Band Pass Filter, this kind of filter is conceived to only let through a given frequency range between two limits. Unlike the two precedent filters, this filter has two cut-off frequencies, which correspond to the lower and a higher limits. So this filter is the combination of a high-pass and a low-pass filter.

Notch Pass Filter, This last type of filter is the opposite of the previous one: It defines a frequency range between two limits to be attenuated. This filter also has two cut-off frequencies and, thus, also combines a high-pass and a low-pass.

**(Total for Question 6 = 15 marks)**

**Total for section B = 35 marks**

**Total for paper = 75 marks**

## SECTION A

Answer ALL questions in both sections .

1. Justin Timberlake : Sexyback <https://youtu.be/pTBDuLS9Dvc>

a. The main vocal is put through a guitar amp simulator. How does this change the vocal timbre and texture. (2)

gives a more gritty, Lo fi feel, aggressive edge, dirty, fuzz, distortion.

b. What performance technique is used on the guitar riff at 2:28 seconds. (1)

1. Tapping    2. tremelo picking    3. palm muting    4. sliding

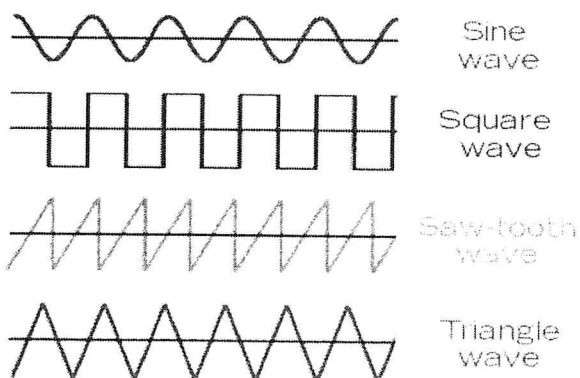
c. The synth bass in this track is routed to the dynamic processing of the kick drum. What is this technique called.

Side chain compression (2)

d. On the outro, a second backing vocal is layered over the first by the same singer. What is this technique called. (1)

Multi tracking or Overdubbing

e. The main riff is based on a square wave . Label these four waveforms. (4)



[www.explainthatstuff.com](http://www.explainthatstuff.com)

(Total for question 1= 10 marks)

2. ABBA : Lay all your Love

<https://youtu.be/2seCB54Bv-c>

a. This track features live instruments and synthesisers. What techniques could be used for sound capture (3)

close mic, ambient mic, Direct injection/input.

b. Is this song in a major or minor key (1)

Minor (D)

c. What best describes the chorus background vocals.

1. monophonic

2. homophonic (2)

d. The end of each verse features a drop created by looping the vocals through a harmoniser set at a semitone lower. How could you recreate this effect with modern technology. (4)

Pitch shift, portamento on sampler. Automated pitch bend on last phrase.

**(Total for question 2 = 10 marks)**

3. T Bone Walker : They Call it Stormy Monday <https://youtu.be/VAPDJheCOJk>

a. This track is a Blues. Explain two characteristics that support this. (4)

12 bar format, I-IV-V chords, seventh chords, shuffle rhythm , first line repeated.

b. Explain three problems you could encounter when recording a live ensemble and how you could overcome them. (6)

bleed from one instrument to another-Baffle boards to help prevent bleed. Varied volumes of different instruments- Placement of mic/instruments. Vocals drowned out- Ensure singer nearest mic. No overdubs - ensure band is rehearsed and a good take is captured. Lack of cohesion in performance-ensure everyone can see/hear each other.

**(Total for question 3 = 10 marks)**

4. Talk Talk : Life's What you Make It

[https://youtu.be/OvMoRVrqx\\_I](https://youtu.be/OvMoRVrqx_I)

a. The introduction features a Piano riff. Why are two mic's better for recording a piano.

To capture the wide dynamic/frequency range. (2)

b. What is missing from a standard drum kit in this track. (1)

Cymbals, hi hats

c. What effect is added to the guitar part give more sustain. (1)

Distortion

d. This track was recorded in 1986. Name three big changes in music technology during this decade.

Digital recording, MIDI, synthesisers, sequencers, samplers, DAW's.

(6)

**(Total for question 4=10 marks)**

**Total for section A = 40 marks**

## Section B

5. The Beatles : Got To Get You Into My Life

<https://youtu.be/bxhhFOnXs2M>

Earth Wind and Fire : Got To Get You Into My Life

<https://youtu.be/MKskYvTGEHE>

Compare the different production and performance techniques used in the two versions.

(20)

Original : Brass intro , bass plays a pedal, Stax feel, instrument bleed, analogue sound, vocals double tracked panned central, brass right, bass drums left. Raw vocal performance. Vocal effects change dramatically at 2:02. Song is 2:30 long 1966, Audible bouncing of tracks leading to lack of clarity in parts.

Cover : funky feel, starts with riff, mellow electric piano, smooth vocals, 1978, syncopated bass guitar parts, smooth vocal arrangement, Extended arrangement (4:03) Layered harmonies. Individual parts clearly recorded, virtuosic performances in guitar, brass and bass parts

(Total for Question 5 = 20 marks)



6. Charlie Christain: Solo Flight

<https://youtu.be/IID2JPnGF00>

Explain why guitar amplification was first needed and how it has developed. (15)

Originally to help the guitar be heard in a big band. 1920's - designed for acoustic guitars-not commercial-no effects. 1930's - pick ups added to guitar sending a signal to a speaker-Rickenbacker and Gibson experiment with amps based on radios. 1940's Leo Fender introduces the Fender Champion 1st amp with volume control-1947 Fender Dual pro 2 channels 2 volumes-adopted by Hawaii/ country lap steel guitars. 1950's Gibson Les Paul amp - Fender Tweed series/ Bassman - treble bass middle and presence, first effects Vibrato (pitch change) Tremelo (volume change).

1957 Vox AC15 - class A design loud and good distorted sound. Types of amp - TUBE - better/warmer sound quality-expensive prone to overheating/damage

SOLID STATE-semiconductor circuits-cheaper/reliable/lighter. 70's onwards

MODELLING-microprocessor technology allows digital onboard effects to recreate the sound of different amps all in one amp LINE 6/ ZOOM 90's onwards

1958 LINK WRAY Rumble-overdriving his tubes-poked holes in speaker to get distortion.

1964 Dave davies slashes speakers, runs amp through another to get fuzzy tone.

1966 Jim Marshall modifies circuitry to achieve distortion.

Amps- pro's ; ambient sound of speaker/casing/room, warmth of tubes, feedback, natural overdrive by volume.

Cons; hiss/buzz, mic placement/capture, cost, transport.

(Total for Question 6 = 15 marks)

Total for section B = 35 marks

Total for paper = 75 marks

## SECTION A

Answer ALL questions in both sections .

1. The Jimi Hendrix Experiences : All Along the Watchtower [https://youtu.be/TLV4\\_xaYynY](https://youtu.be/TLV4_xaYynY)

a. What two types of guitar can be heard before the vocals enter.

1.Acoustic (12 string)

2.Electric ( clean Strat) (2)

b. What style/technique of guitar playing is employed at 2:00. (1)

Slide guitar, Bottleneck.

c. How is this section (2:00-2:30) given a psychedelic, 'spaced' feel. (1)

Wide reverb, wide panning.

d. What effect is used on the lead guitar from 2:16 (1)

Wah Wah pedal.

e. What aspect of timbre does this effect change. (2)

Frequencies, Eq, filters frequency range.

f. This track was recorded in 1968. Give three examples that confirm this.

Bleed, lack of clarity of parts due to bouncing, psychedelic feel, loose rhythms,  
limited clarity in vocals, lack of compression, live feel, audible mistakes. (3)

(Total for question 1= 10 marks)

2. Ella Fitzgerald and Louis Armstrong : Summertime

<https://youtu.be/MIDOEOL7IA>

- a. When recording brass instruments which performance feature must you watch out for. (2)

**High Sound pressure levels, high volume.**

- b. How is it best to place the mic to avoid this. (2)

**Off axis to avoid main air flow.**

- c. What is the name for the improvisatory vocal technique employed at 3:29 (1)

**Scat singing, scatting.**

- d. This track was recorded in 1957. Why would the vocal performance have to be of a higher calibre compared to a modern day recording . (5)

**Recorded live with band, very limited overdub options,**

**more takes = more studio time = more money,**

**no melodyne or vocal effects.**

**(Total for question 2 = 10 marks)**

3. Grace Jones : Slave to the Rhythm

<https://youtu.be/Z0XLzIswI2s>

a. What percussion instrument enters at 1:10 (1)

**Tambourine.**

b. What effect is used on the backing vocals at 2:14. (2)

**Tap delay, timed delay.**

c. This track features a polyphonic synth. How does a polyphonic synth differ from a monophonic one. (2)

**A polyphonic synth can play several notes at once as oppose to a monophonics ability to only play one at a time.**

d. This track was recorded in 1985. Give five reasons to support this (5)

**Drum machines, gated reverb, synth strings and brass, polished production, overdubbing, multi-tracking, electric bass, timed delay, sequencers, use of MIDI, sequenced rhythmic parts.**

**Total for question 3 = 10 marks)**

4. Aerosmith featuring Run DMC : Walk this Way

a. Give two characteristics of rap featured in this song.

(2)

Scratching, Rapping, doubling of certain words and phrases, drum machine beat, sampling of guitar riff.

b. Give two characteristics of rock featured in this song.

(2)

Distorted guitar, riff, guitar solo, loud vocals, screams.

c. Discuss the advantages of using a drum machine over a live drummer.

(6)

One audio output as oppose to several mics, less time consuming, cheaper, reliable, programmable, different sounding kits, easy to mix, create new sounds (sorry Drummers)

(Total for question 4=10 marks)

Total for section A = 40 marks

## Section B

5. Styx : Mr Roboto

<https://youtu.be/98o0AJ8cNNk>

Kids on Drugs : Mr Roboto

<https://youtu.be/KGsb7eo2Y1g>

Compare the different production and performance techniques used in the two versions. (20)

**Original : 80's production, heavily synth based, vocal harmonies, recorded with live instruments**

**song structure (verse chorus etc), studio based.**

**Cover: DAW based, dubstep style, samples of original remixed, drops, new voices added, through**

**arrangement, LFO's , wobble effects, synth drums, samples.**

(Total for Question 5 = 20 marks)