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Mark Scheme (Results)

Summer 2014

GCE Music Technology (6MT02/01)

Paper 1: Listening and Analysing

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- **General Marking Guidance**

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Section A

Question Number	Question	Mark
1(a)	This track has been influenced by swing music. Give three elements of the **arrangement** that demonstrate this. Acceptable Answers • **swung / shuffle / triplet (rhythm)** • **brushes on drums** • **double bass** • **walking bass** • **horn section** • **brass stabs** • **scat** • **extended chords** • **(piano / guitar) comping** • **syncopation** • **clean guitar**	**3**

Question Number	Question	Mark
1(b)	Other than the piano, name the tuned percussion instrument heard from 2'17"? Acceptable Answers Vibraphone / vibes **Accept recognisable spelling**	**1**

Question Number	Question	Mark
1(c)	Complete the table below to describe how you would close mic a grand piano in stereo. Refer to your choice of microphones and mic placement in your answer.	**4**
	Acceptable Answers	
	Choice of mics **Condenser / capacitor / electret / accept make and model.** **Allow any polar pattern except omni.** **(1)** **Mic placement** • **Coincident / XY / spaced / AB (pair)** • **one for bass, one for treble** • **6-24'' / 15-60cm** • **pointing toward keyboard end / hammers / strings** • **lid open** **(3)**	

Question Number	Question	Mark
1(d)	The brass sounds heard from 2'37" are not created by actual brass instruments. How might they have been created when this was recorded in 1983?	**2**
	Acceptable Answers	
	• **analogue (accept DX) (1) synth (accept keyboard/MIDI) (1)** • **sampling** • **saw (tooth) waves** **Give two marks for any correctly named synth of the era, eg Jupiter 8, Yamaha DX7**	

Question Number	**Question**	Mark
2(a)	Identify the tonality of the opening of the song.	**1**
	Acceptable Answers	
	B Major	

Question Number	Question	Mark
2(b)	What is the term for unaccompanied vocals such as those between 0'05" and 1'11"?	**1**
	Acceptable Answers	
	A cappella	

Question Number	Question	Mark
2(c)	Complete the table below to describe the placement in the stereo field of the selected tracks.	**3**
	Acceptable Answers	

Track	Place in stereo field
Brass stabs from 1'21"	Centre / left and right / mono **(1)**
Main vocals from 1'31"	Centre / left and right / mono **(1)**
Backing vocals from 1'41"	Centre / left and right / mono **(1)**

Question Number	Question	Mark
2(d)	Which of the following best describes the harmony of the accompaniment from 1'11"?	**1**
	Acceptable Answers	
	D The harmony is static	

Question Number	Question	Mark
2(e)(i)	There is a distinctive effect on the snare drum between 4'00" and 4'19". How might this have been achieved in 1992 using digital technology?	**2**
	Acceptable Answers	
	• sample (1) • reverse (1) • filtered (1) white noise (1) with envelope / long attack (1) **allow alternative technical wording**	

Question Number	Question	Mark
2(e)(ii)	How might this have been achieved in 1972?	**2**
	Acceptable Answers	
	• analogue / tape (1) • reverse and apply reverb (1) then play forwards again (1) • filtered (1) white noise (1) with envelope / long attack (1) **allow alternative description of process for second point**	

Question Number	Question	Mark
3(a)	In which decade was this track recorded?	**1**
	Acceptable Answers	
	1950s	

Question Number	Question	Mark
3(b)(i)	What term is used to describe this style of music?	**1**
	Acceptable Answers	
	C: Doo-wop	

Question Number	Question	Mark
3(b)(ii)	Identify **one** feature of the style heard in this recording	**1**
	Acceptable Answers	
	• wordless or onomatopoeic vocals • harmony vocals / <u>many</u> backing vocals • simple harmonic structure / I VI IV V • simple accompaniment / few instruments • voices used as accompanying instruments • honky-tonk / out of tune piano • wide vibrato • very simply drum kit part • sharing lead vocal • repeated piano triads • dominant 7ths • string / upright / double bass • swung rhythm	

Question Number	Question	Mark
3(c)	Which of the following best describes the vocal ensemble in this recording?	**1**
	Acceptable Answers	
	C Tenor, Tenor, Baritone, Bass	

Question Number	Question	Mark
3(d)	What is the approximate tempo of this song in beats per minute?	**1**
	Acceptable Answers	
	75(bpm) (Accept 65-85)	

Question Number	Question	Mark
3(e)	Due to limitations in the technology of the time this recording has some problems. Two of the issues are given in the table below. State how they might have been caused and how they could be avoided using modern equipment	**4**

Acceptable Answers

Problem with recording	How might it be caused?	How could it be avoided?
Piano sounds muddy under the vocals	• EQ issues • too far away from mic • no panning / mono • not separately miked • not multi-tracked	• add appropriate EQ • separate mic for piano • stereo spread / effective use of stereo field • mic up each part separately • multi-track parts
Vocals are not well balanced	• not separately miked • recorded with one mic only • not multi-tracked • balanced by proximity to mic only • Lack of compression	• mic up each part separately • multi-track vocals • compression

Question Number	Question	Mark
3(f)	What is the time signature of this song?	**1**
	Acceptable Answers	
	6 or 6/8 **8** **Or** **12 or 12/8** **8** **Accept :** 4/4 with a triplet feel	

Question Number	Question	Mark
4(a)	Identify the root notes of the repeating chord sequence played by the guitar in the introduction. Acceptable Answers C F **A** **G** Allow lower case Accept Am/A min/A maj/A major in third box Accept Gm/G min/G maj/G major in fourth box Do not accept A# or A*b* in third box Do not accept G# or G*b* in fourth box	**2**

Question Number	Question	Mark
4(b)	Which of these words best describes the guitar part from 0'06'' to 0'29''? Acceptable Answers **C** Ostinato	**1**

Question Number	Question	Mark
4(c)	What type of ensemble accompanies the guitar and vocal in this recording from 1'33''?	**1**
	Acceptable Answers	
	Brass (band) If any of • string(s) • woodwind • orchestra • choir • horn section • reed(s) is listed as well as brass award 0.	

Question Number	Question	Mark
4(d)	A performance very close to a cardioid microphone may result in a boost of the lower frequencies. What is the name of this effect?	**1**
	Acceptable Answers	
	Proximity (effect) **Accept recognisable spelling**	

Question Number	Question	Mark
4(e)	Using close-mic techniques to capture an intimate vocal performance can lead to problems. Complete the table to describe how these problems could be avoided.	**3**

Acceptable Answers

Plosives	pop shield / pop filter / increase distance from the microphone / sing off mic / adjust performance
Unwanted room reverb	cardioid mic / use baffles / acoustic panels / recorded in vocal booth / dead room / reflection filters
Sibilance	de-esser / EQ (must refer to upper mid-high frequencies) / increase distance from the microphone / use of dynamic microphone / sing off mic

Question Number	Question	Mark
4(f)	If this were a live studio recording, suggest **two** measures that you would take to reduce spill when capturing the vocal.	**2**

Acceptable Answers

- baffle boards or acoustic panels / reflection filters
- vocal booth
- (hyper) cardioid mic / figure of 8
- mic facing away from other performers
- increased distance between performers
- place microphone close to vocalist
- closed shell headphones for vocalist
- reduce monitoring levels
- reduce low frequencies using EQ / HPF

Section B

Question Number	Question	Mark
5(a)	Describe the use of panning in the introduction (0'06" – 0'34"). Acceptable Answers - Bass drum centre / left and right (1) - Vocal centre / left and right (1) - Lead guitar centre / left and right (1) - Nothing moves / static (1) **Or** Mono (3)	**3**

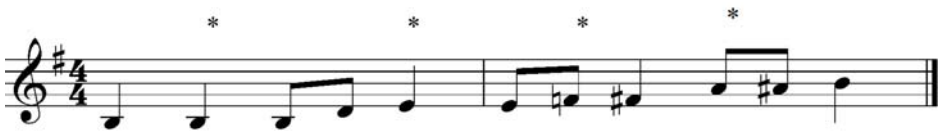
Question Number	Question	Mark
5(b)(i)	Name two performance techniques being used by the lead guitarist between 3'17'' and 3'51''? Acceptable Answers • String bends • Vibrato • Hammer-ons • Pull-offs • Picking / plucking • Slides / glissando	**2**

Question Number	Question	Mark
5(b)(ii)	Suggest two ways the distortion on the lead guitar could have been achieved at the time?	**2**
	Acceptable Answers	
	• Pedal / booster (accept brand names) • Overdriving the valves • Turning up the gain / drive / volume / amp **Accept**: lead / distortion / high gain channel	

Question Number	Question	Mark
5(c)	Complete the table below, suggesting two technical challenges to be considered when recording a drum track for a hard rock band and giving two possible solutions.	**4**

Acceptable Answers

Challenge	Solution
keeping in time	click track/ guide track
different parts of the kit have different frequency ranges	different mic types for each part of the kit
balance	use separate tracks / mic positions
bleed/spill	close mic / EQ / gate /overdub / drum booth / acoustic screens
many separate elements to capture	use more mics
avoid clipping / loud	leave some headroom/pad/turn down gain/compressor/limiter
wide dynamic range	compressor/limiter
stereo	2 overheads / XY
capture characteristic sound, eg, punchy	valid mic placement / EQ / compression
tuning/damping	tune / adjust tension of heads / moon gel / cushions / gaffer / padding
Squeaks/rattles	WD40 / tighten hardware
drummer may hit mics	position mics appropriately

Question Number	Question	Mark
5(d)	Fill in the **four** missing pitches from the lead guitar line between 2'09" and 2'12".	**4**
	Acceptable Answers	
	 Accept enharmonic equivalents	

Question Number	Question	Mark
5(e)	Suggest **one** way in which a 'robot-voice' effect could be created.	**1**
	Acceptable Answers	
	• Ring modulator / fast amplitude modulation / tremolo • Vocoder • Talk box • Singing through a fan • Bitcrusher • Cutting up a sample • Voice/vocal transformer • Phaser • Flanger • Rotary	

Question Number	Question	Mark
5(f)	Describe the contribution made to Heavy Rock by **one** of the following, supporting your answer with reference to relevant albums and/or tracks. [ ] Led Zeppelin [ ] Deep Purple	**4**
	Acceptable Answers	
	Allow max one mark for naming specific tracks or albums **Additional marks for naming tracks/albums if qualified** **Credit answers that relate to contribution to Heavy Rock, not general facts unrelated to their musical output** **Led Zeppelin** • guitar-driven sound / use of distortion • rooted in blues • folk influence • use of unusual instruments (eg recorder, hurdy gurdy) • extended/unusual song structures • riff based • vocal: wide pitch range/wide dynamic range • experimental guitar techniques (eg using violin bow) • extended solos /virtuosic playing • unusual to have solos on instruments other than guitar • theatrical stage presence • viewed themselves as an 'album band' and disliked releasing their songs as singles • albums: *Led Zeppelin*, *Led Zeppelin II*, *Led Zeppelin III*, *Led Zeppelin IV*/ untitled, *Houses of the Holy*, *Physical Graffiti, In Through the Out Door, Presence, Coda* **Deep Purple** • guitar-driven sound • rooted in blues • classical influence • Progressive rock influences • riff based • vocal: wide pitch range/wide dynamic range • organ style influential • distinctive guitar style (e.g. phrasing / harmonic / tonal choices) • extended solos /virtuosic playing • Albums: *Shades of Deep Purple*, *The Book of Taliesyn, Deep Purple, In Rock, Fireball*, *Machine Head, Made in Japan, Who Do We Think We Are, Burn, Stormbringer, Come Taste the Band*	

Question Number	Question	Mark
6(a)	What degree of the minor scale is used for much of the melody line?	**1**
	Acceptable Answers	
	5th / fifth / V / 5 / five / dominant	

Question Number	Question	Mark
6(b)	Which of the following best describes the range of the bass part?	**1**
	Acceptable Answers	
	B Perfect 5th	

Question Number	Question	Mark
6(c)	Listen to the phrase "Welcome to Jamrock" between 1'15" and 1'23". How has the 'telephone effect' been achieved?	**1**
	Acceptable Answers	
	Low and high frequencies cut/ mid frequencies boosted/band pass filter Allow: high pass filter / cut low frequencies	

Question Number	Question	Mark
6(d)	What is the name for the accented off-beat rhythmic chords that are typically found in reggae music?	**1**
	Acceptable Answers	
	Skank / chop / ska stroke	

Question Number	Question	Mark
6(e)	Describe the EQ on the bass line.	**1**
	Acceptable Answers	
	Low frequency boost/low shelving boost/low pass filter/high cut/boosted < 200 Hz	

Question Number	Question	Mark
6(f)	Describe the delay on guitar between 0'08" and 0'27"**.**	**3**
	Acceptable Answers	
	• Changes (1) / on-off-on (2) • High feedback/many repeats • Delay time not tempo synced / allow: in triplets • Short delay time / 150-400 ms • Loud repeats / high send level / very wet • Repeats decrease in volume • Darker repeats / high frequencies cut on repeats • Analogue/tape delay	

Question Number	Question	Mark
6(g)	Describe the use of lo-fi sounds between 3'08" and the end.	**2**
	Acceptable Answers	
	• Crackling/vinyl (1) continously in background (1) dated feel (1) • Piano/keyboard: out of tune (1) toy (1) playing countermelody /simple melody(1) • Clicking/clunky/gun noise (1) used as a rhythmic device (1) and as an ending (1) • Telephone EQ effect/band pass filter (1) • Creates sense of coda	

Question Number	Question	Mark
6(h)	Select two of the reggae artists below and describe their contribution to reggae music. Support your answer with reference to relevant albums and/or tracks.	**10**
	Acceptable Answers	
	Allow max one mark for naming specific tracks or albums **Additional marks for naming tracks/albums if qualified** **Credit answers that relate to contribution to reggae, not general facts unrelated to their musical output** **Bob Marley** • Political lyrics • Rastafarianism • Slow tempo reggae compared to ska • Bob Marley fronted The Wailers • Wailers' first major label album was *Catch a Fire* (1973) • *Catch a Fire* recorded on eight-track with high production values • Followed by *Burnin'*, which included the standout songs "Get Up, Stand Up", and "I Shot the Sheriff"… • *Island records wanted a more rocky sound – used English musicians on early Island records* • Eric Clapton's cover of "I Shot the Sheriff" raised Marley's international profile • Found fans across both reggae and rock audiences / crossover audience • International breakthrough with "No Woman, No Cry", (1975) • Breakthrough album in the United States, *Rastaman Vibration* (1976) • *Exodus* included four UK hit singles: "Exodus", "Waiting in Vain", "Jamming", and "One Love" • Showed strong opposition to South African apartheid in his song "War" in 1976. • *Uprising* (1980) was Bob Marley's final studio album, and is one of his most religious productions; it includes "Redemption Song" and "Forever Loving Jah" • *Confrontation*, released posthumously in 1983, contained unreleased material recorded during Marley's lifetime, including the hit "Buffalo Soldier" and new mixes of singles previously only available in Jamaica • Worked with Lee "Scratch" Perry and Coxone Dodd at Studio One	

Lee 'Scratch' Perry

- Dub
- Writer/producer – one of the first
- Elevated the profile of the mixing engineer to a more creative role
- Used long reverb times
- Used high feedback delay
- Use of phaser and flanger
- Did dub mixes / cut out vocal
- Innovative studio techniques and production values.
- Perry has worked with Bob Marley & the Wailers, Junior Murvin, The Congos and Max Romeo.
- His first major single was "People Funny Boy"
- Innovative use of found sounds/samples (e.g. a crying baby) …
- … using tape
- Popular in both Jamaica and internationally
- Achieved his own sound using basic recording equipment.
- The Black Ark – own studio
- Own house band (Upsetters – went on to play with Bob Marley)
- Unusual toasting style and lyrics, quotes from movies, etc.
- In 1998 Perry reached a wider global audience as vocalist on the track "Dr. Lee, PhD" from the Beastie Boys' album *Hello Nasty*
- In 2003, Perry won a Grammy for Best Reggae Album with the album *Jamaican E.T.*
- Worked with On-U Sound
- Collaborated on several dubstep collaborations

King Tubby

- Dub
- Made own equipment as a radio/studio engineer
- Innovative studio work
- Elevated the profile of the mixing engineer to a more creative role
- Remixes
- Sound systems
- Added delay/reverb to existing tracks
- Used long reverb times
- Used high feedback delay
- Cut the vocal
- Focus on drums and bass
- Any valid description of use of EQ, eg, EQ sweeps
- Bringing instruments and vocals in and out of the mix
- Was able to 'play' the mixing desk like an instrument
- Tubby engineered remixed songs for others to toast over.
- His most famous dub is "King Tubby's Meet The Rockers Uptown".
- Support upcoming artists: Hopeton Brown aka Scientist, Prince Jammy
- Pioneer of Digital Dancehall sound
- Drum machines, synths etc.
- Studio know as Fire House

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