

## External Assessment practice paper

NCFE Level 3 Applied General Certificate in  
Music Technology (601/6779/8)

Paper number: **practice paper** (Written)

**This is NOT a live paper**

Time allowed: 2 hours

Total marks: 80

<b>Learner number:</b>	
<b>Forename:</b>	
<b>Surname:</b>	
<b>Centre number:</b>	

**Learner declaration:**

I confirm that the work contained in this external assessment is all my own work.  
I have not copied work from anyone else.  
I have not copied work directly from handouts/internet/textbooks or any other publication.  
If I have used a quote, then I have referenced this appropriately.

**Learner's signature:**

**Date:**

## **Time allowed**

**2 hours** of timed external assessment.

## **Instructions for learners**

- Complete your personal details on the first page.
- Read the tasks carefully and make sure that you understand what you need to complete.
- The marks for each question are indicated at the end of each question eg (1).
- The beginning of each section has a recommended amount of time to spend on it.
- Write your responses to the questions in the spaces provided. If you need more space you may use extra paper. Make sure that any extra paper is labelled clearly with your name, centre number and learner number and securely attached to the answer booklet.
- All the work you submit must be your own. You may use all of the material given within the external assessment paper but no other resources should be taken into the examination room.
- You're not allowed to use the internet or any other material to help you complete the tasks.
- You must sign the learner declaration on the front page of this assessment paper to declare that the work produced is your own.
- At the end of the assessment hand all documents over to your Invigilator.

## **Resources**

- headphones
- individual workstation with listening capabilities
- calculator

# External assessment

You should record your answers in the spaces provided. You may use extra paper if you need it. Make sure that any extra paper is labeled clearly with your name, centre number and learner number and attached to this external assessment paper.

## Section 1a

**This section has a possible 10 marks.**

**We recommend that you spend 15 minutes on this section.**

### Listen to Example 1.

1. The bass guitar audio loop heard from the beginning of Example 1 has a noticeable click each time it repeats.

Identify the audio tool that you would use to minimise the click.

Circle the correct answer:

- a) Audio Quantise
- b) Cross Fade
- c) Pitch Manipulation
- d) Transient Detection

Q1	
	1

2. Identify the type of dynamic processing used on the bass, snare and tom drums heard from 0.06 in Example 1.

Q2	
	1

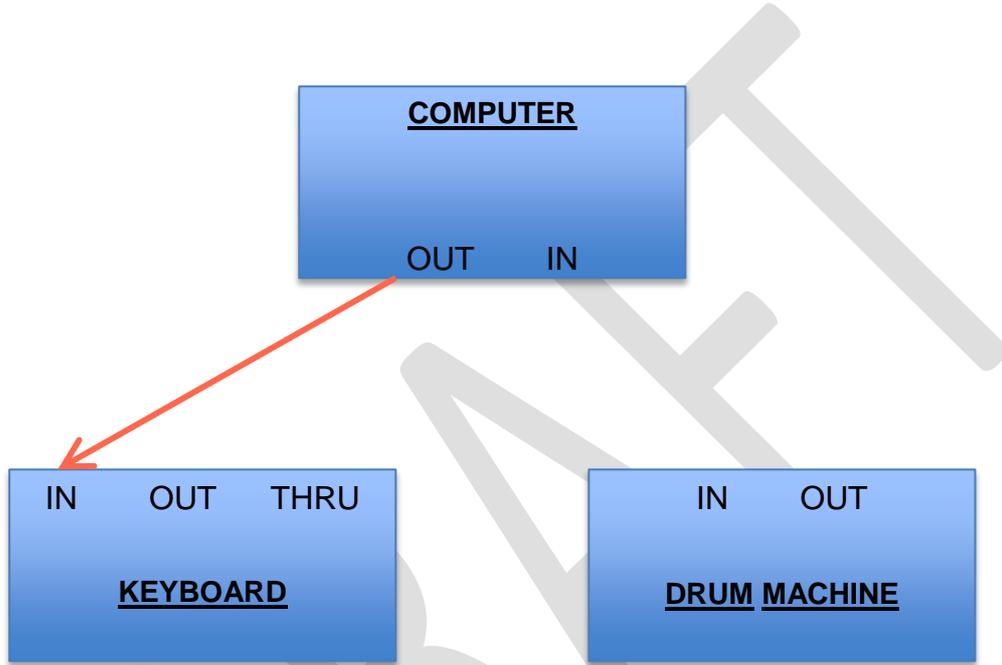
.....

3a. Example 1 features a hardware keyboard and drum machine triggered from the DAW via MIDI.

On the diagram below draw arrows to indicate how you would connect **MIDI IN**, **OUT** and **THRU** to use the keyboard as both a controller for the DAW and as a sound source, and the drum machine as a sound source only.

The first connection has been drawn in correctly. You will need to draw in two further connections.

Q3a	
	2



3b. Explain why you would turn Local Control Off on the keyboard in the setup above.

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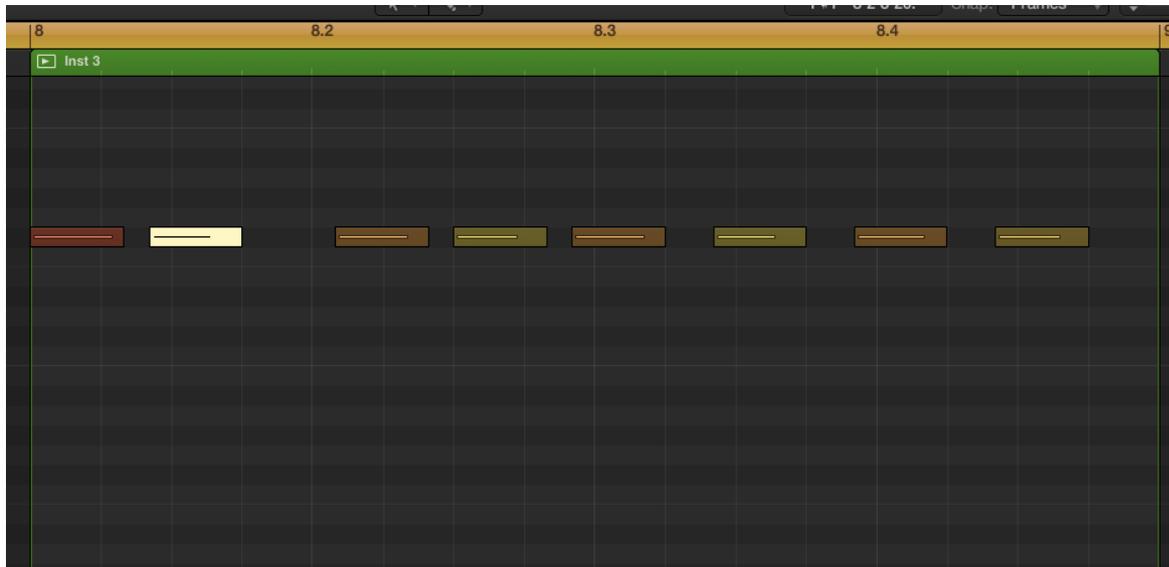
.....

Q3b	
	2

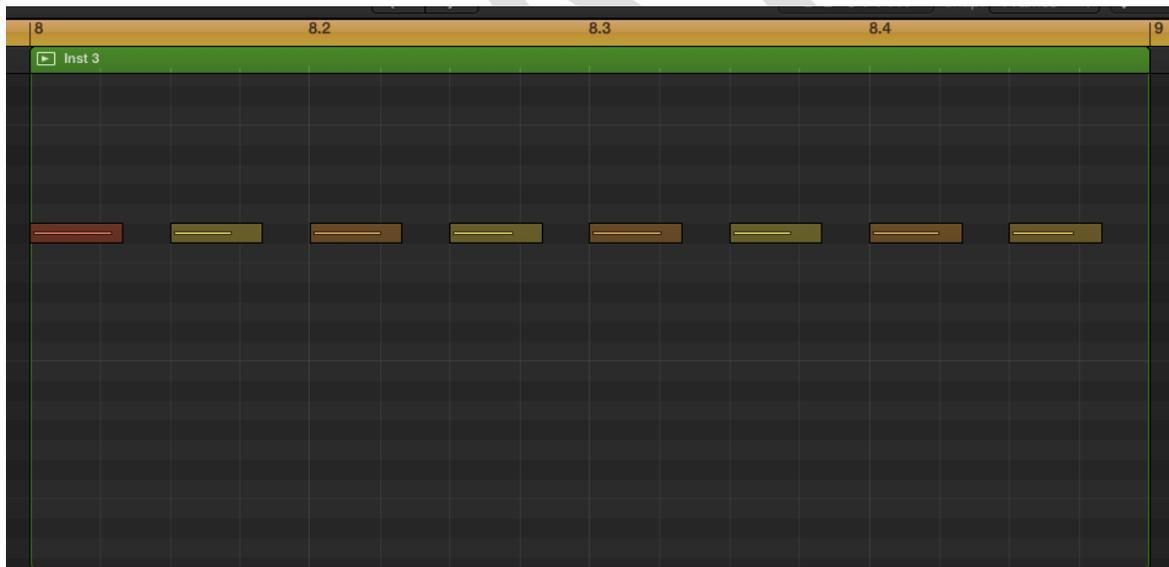
4. Screenshot 1 of a software edit window shows the 1-bar hi-hat part heard from 0.13 in Example 1 as it was recorded. The part is out of time.

Screenshot 2 shows the hi-hat part after it was quantised.

Screenshot 1.



Screenshot 2.



Explain the quantise setting you would have used to put the part in time.

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Q4	
	2

5. Explain how automation has been used to control the tone of the synthesiser part heard from 0.07 onwards in Example 1.

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Q5	
	2

This is the end of Section 1a

DRAFT

Section 1b

This section has a possible 10 marks.

We recommend that you spend 15 minutes on this section.

Listen to Example 2.

6. Identify 3 non percussion instruments which you can hear in Example 2.

Instrument 1

.....

Q6	
	3

Instrument 2

.....

Instrument 3

.....

7. Describe the rhythmic effect heard at 0.18-0.19 in Example 2.

Q7	
	2

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.....  
.....  
.....

8. Using musical terms explain the chord progression used throughout Example 2.

Q8	
	2

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.....  
.....  
.....

9. Listen to the melody line heard from 0.19 in Example 2.

Identify the note name of the note missing from the tenth bar of the melody line shown below.

Note name = .....

Q9	
	1

10. Evaluate **one** example of how music technology has been used stylistically in Example 2.

Q10	
	2

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This is the end of Section 1b

Section 1c

This section has a possible 10 marks.

We recommend that you spend 15 minutes on this section.

Listen to Example 3.

11. To create stereo recordings X/Y (coincident) pair microphone placement is sometimes used.

Identify which microphone Polar Pattern is traditionally used in X/Y placement.

Circle the correct answer:

- a) Cardioid
- b) Figure Of 8
- c) Hyper Cardioid
- d) Omni-Directional

Q11	
	1

12. The Ukulele heard in Example 3 was recorded using a condenser microphone (A) via a line level audio interface (C) to a DAW (D).

Identify the item of hardware (B) which would be required in the recording chain.



A. Condenser Microphone

B. ....  
.....

C. Line Level Audio Interface

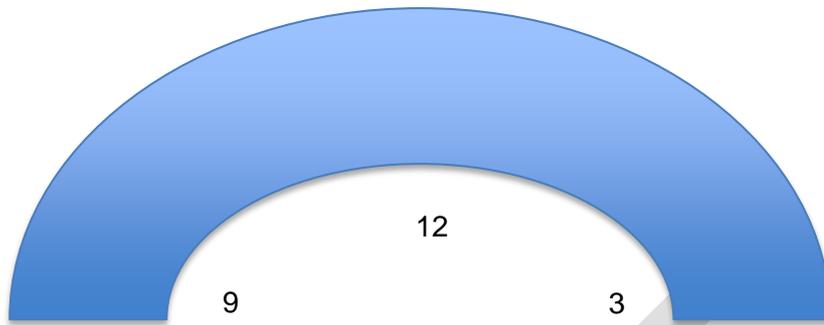
D. DAW

Q12	
	1

13. Listen to Example 3. Use the diagram below to label the stereo placement of:

- I. Ukelele
- II. Shaker

<b>Q13</b>	
	<b>2</b>



14a. Identify one editing issue in Example 3.

<b>Time Reference</b>
<b>Issue</b>

<b>Q14a</b>	
	<b>1</b>

14b. Identify one EQ issue in Example 3.

<b>Time Reference.</b>
<b>Issue.</b>

<b>Q14b</b>	
	<b>1</b>

15. Example 3 was recorded in a room which is very reverberant at around 1kHz.

The room is satisfactory across the rest of the frequency range.

Using the table below evaluate which would be the most appropriate absorber to control the unwanted reverb.

Absorber	Sound Absorption Coefficients at Frequency (Hz)		
	250 Hz	1000 Hz	4000 Hz
Draperies - medium	0.2	0.7	0.6
Upholstered seating - unoccupied	0.4	0.7	0.6
Acoustic tile - suspended	0.7	0.7	0.7
Window glass	0.2	0.09	0.4

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Q15	
	4

This is the end of Section 1c

Section 1d

This section has a possible 10 marks.

We recommend that you spend 15 minutes on this section.

Listen to Example 4.

16. Various methods of synthesis have been used to create sounds in Example 4.

Draw a line to connect the two **synthesis methods** to the most appropriate descriptions for each.

**Synthesis Method 1**

FM

**Synthesis Method 2**

Additive

Uses harmonically rich waveforms which are filtered.

Uses one waveform to modulate another.

Uses captured audio which is modified and shaped.

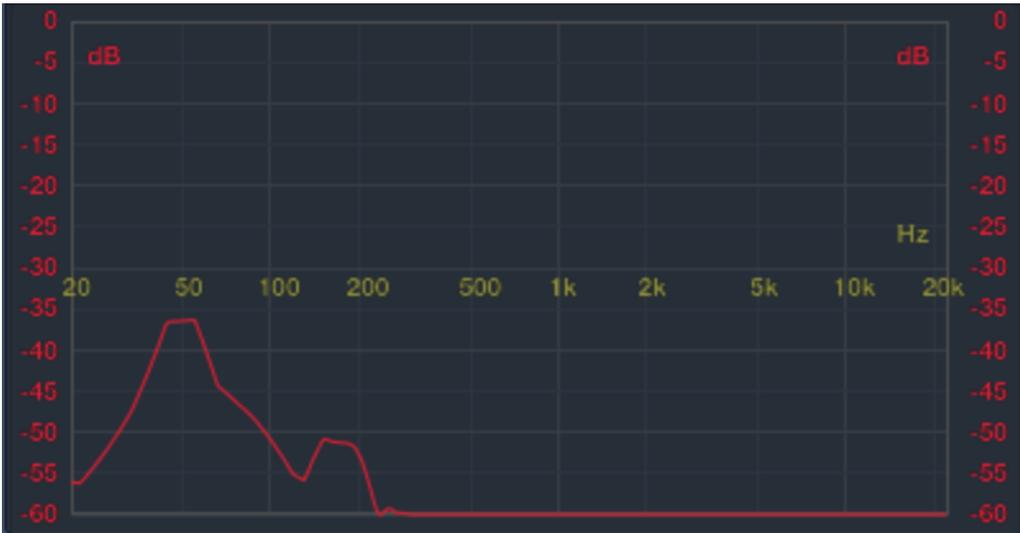
Uses multiple simple waveforms combined.

Steps through a set of stored waveforms.

<b>Q16</b>
2

17. Picture 1 shown below is a representation of a single sound heard in Example 4.

Picture 1



Using technical terms describe what information the picture gives you about the sound.

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.....

Q17	
	2

18. You have been asked to create a snare drum sampler patch. Explain why you might use velocity switching in creating the sampler patch.

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Q18	
	2

19. Which word is represented by the letter 'S' in term ADSR ?

Circle the correct answer:

- a) Sample
- b) Subtractive
- c) Sustain
- d) Synthesis

<b>Q19</b>	
	<b>1</b>

20. Identify the type of waveform heard initially at 0.00 to 0.03 in Example 4.

.....

<b>Q20</b>	
	<b>1</b>

21. Explain using technical terms how an LFO has been used to modify the synthesised sound heard in Example 4 initially from 0.03 to 0.17.

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<b>Q21</b>	
	<b>2</b>

**This is the end of Section 1d**

**Section 1e**

**This section has a possible 20 marks.**

**We recommend that you spend 30 minutes on this section.**

**22.** You are setting up the stage for a performance and have to select appropriate input sources for a drummer’s performance.

Fill the gaps in the table below to show what input sources you will use and describe the reasons for your choice.

<b>Q22</b>
<b>4</b>

<b>Instrument</b>	<b>Input Source</b>	<b>Reason for choice</b>
Kick Drum	Dynamic Microphone (AKG D112)	Tolerance of high SPL and extended bass response
Snare Drum	Dynamic Microphone (Shure SM57)	Tolerance of high SPL and frequency response useful for capturing detail of snare.
Hi-Hat		
Drum Machine		

**23.** Explain why balanced lines are used in live work.

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<b>Q23</b>
<b>2</b>

24. You have connected two passive monitor speakers to one channel of a power amplifier. The monitor speakers have an impedance of 8 ohms each and are connected in parallel. What is the total impedance presented to the power amplifier ?

Circle the correct answer:

- a) 2 ohms
- b) 4 ohms
- c) 8 ohms
- d) 64 ohms

<b>Q24</b>	
	<b>1</b>

25. Explain why sound pressure levels should be monitored during live performance.

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<b>Q25</b>	
	<b>2</b>

26. Identify the name of this type of power connector.



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<b>Q26</b>	
	<b>1</b>

27. You are working as a live sound engineer and have been given the basic technical specification below for a band.

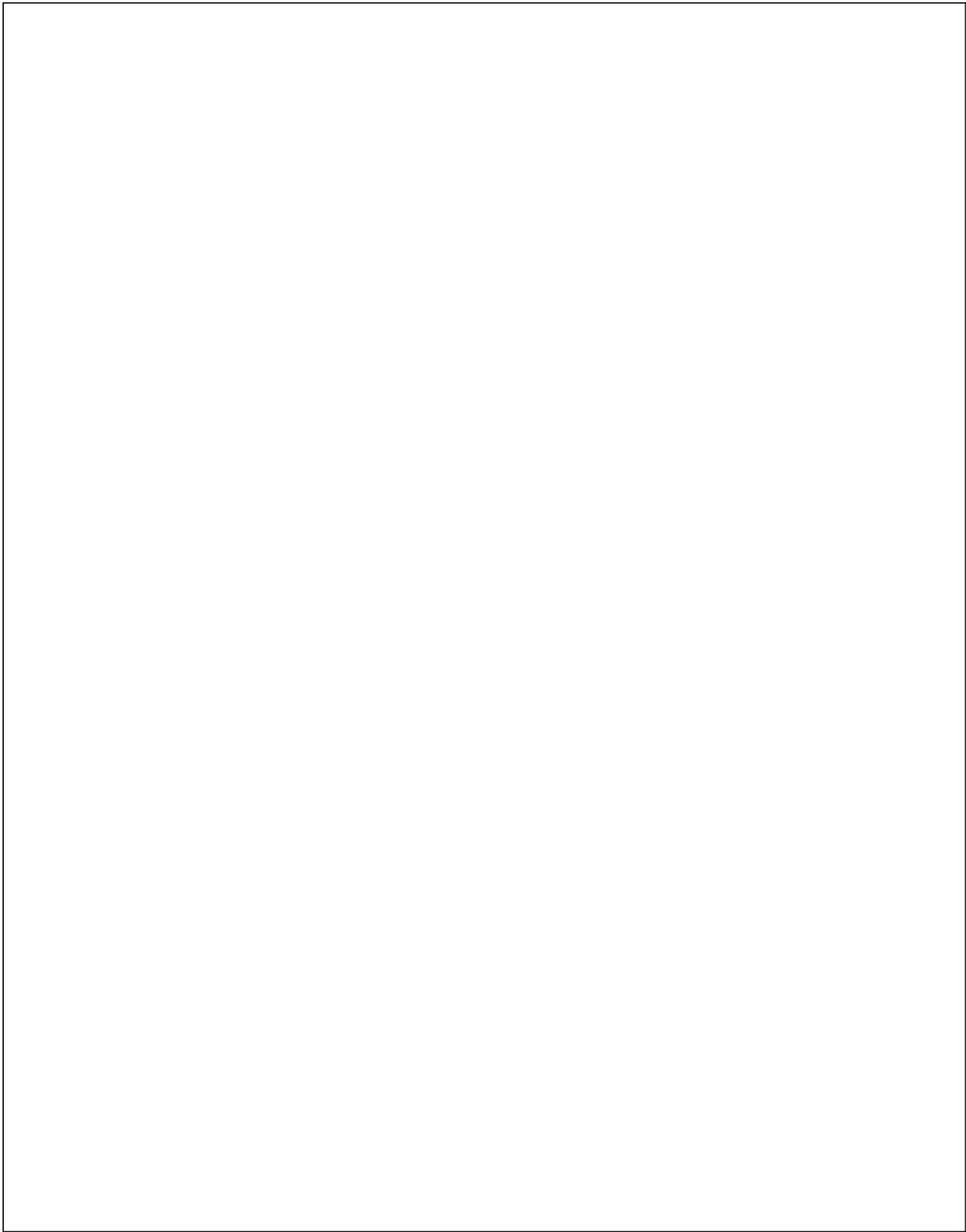
Explain how you would set up the stage and your mixer input channels in readiness for soundcheck, justifying your equipment choices, the reasons for your selection and assessing any issues that you might expect to have to deal with.

<b>The Daves!</b>		
<b>Tech Spec</b>		
<b>Person</b>	<b>Instrument</b>	<b>Notes for soundman</b>
Big Dave	Vocals	Big Dave has a vocal harmonizer pedal onstage to keep himself in tune
Davina	Bass guitar, vocals	
Dave	Cajon, vocals	
Davinda	Saxophone, vocals	
Wee Davey	Electric guitar	Wee Davey has a really big amplifier
Roger	Synth and laptop	Roger likes his synth and laptop in stereo

You may use bullet points, images, and/or diagrams to illustrate your answer.

You may consider using examples to support your points.

Use the space on the following page.



Q27
10

**This is the end of Section 1e**

Section 1f

This section has a possible 20 marks.

We recommend that you spend 30 minutes on this section.

28a. You have performed on a CD that is for sale, but you are not the songwriter.

Which organisation may collect royalties on your behalf?

- a) MCPS
- b) MU
- c) PPL
- d) PRS

Q28a	
	1

28b. Identify one document that you should have for any work you agree to undertake.

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Q28b	
	1

29. Explain one positive aspect and one negative aspect of selling music on CD from the artists point of view.

Positive.....  
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Negative.....  
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Q29	
	4

**30a.** You have released a product for download and created some t-shirts to sell as merchandise.

Using the table below work out :

- I. Total from costs and sales
- II. How many **more** downloads you will need to break even

Costs		Sales	
£600	Recording, mix, master	£60	100 downloads @ 60p each
£60	30 T-Shirts @ £2 each	£360	30 T-Shirts @ £12 each
Total Costs £660			
Total Sales £420			
<b>TOTAL -£ .....</b>			

**State the number of downloads required to break even = .....**

<b>Q30a</b>	
	<b>2</b>

**30b.** You have decided to press a limited run of vinyl. Complete the table to calculate :

- I. Your total running cost
- II. How much you will have to sell each piece of vinyl for to break even

Debt		Break even sale price	
£240	Outstanding recording costs	Vinyl Sales	<b>100 7" @</b> <b>£ .....</b>
£360	100 7" Vinyl Pressed @ £3.60 each		
£80	100 7" sleeves @ 80p each		
<b>Total Running Cost</b> <b>£ .....</b>			

<b>Q30b</b>	
	<b>2</b>

**31.** You have recorded, mixed and mastered a song ready for digital release.

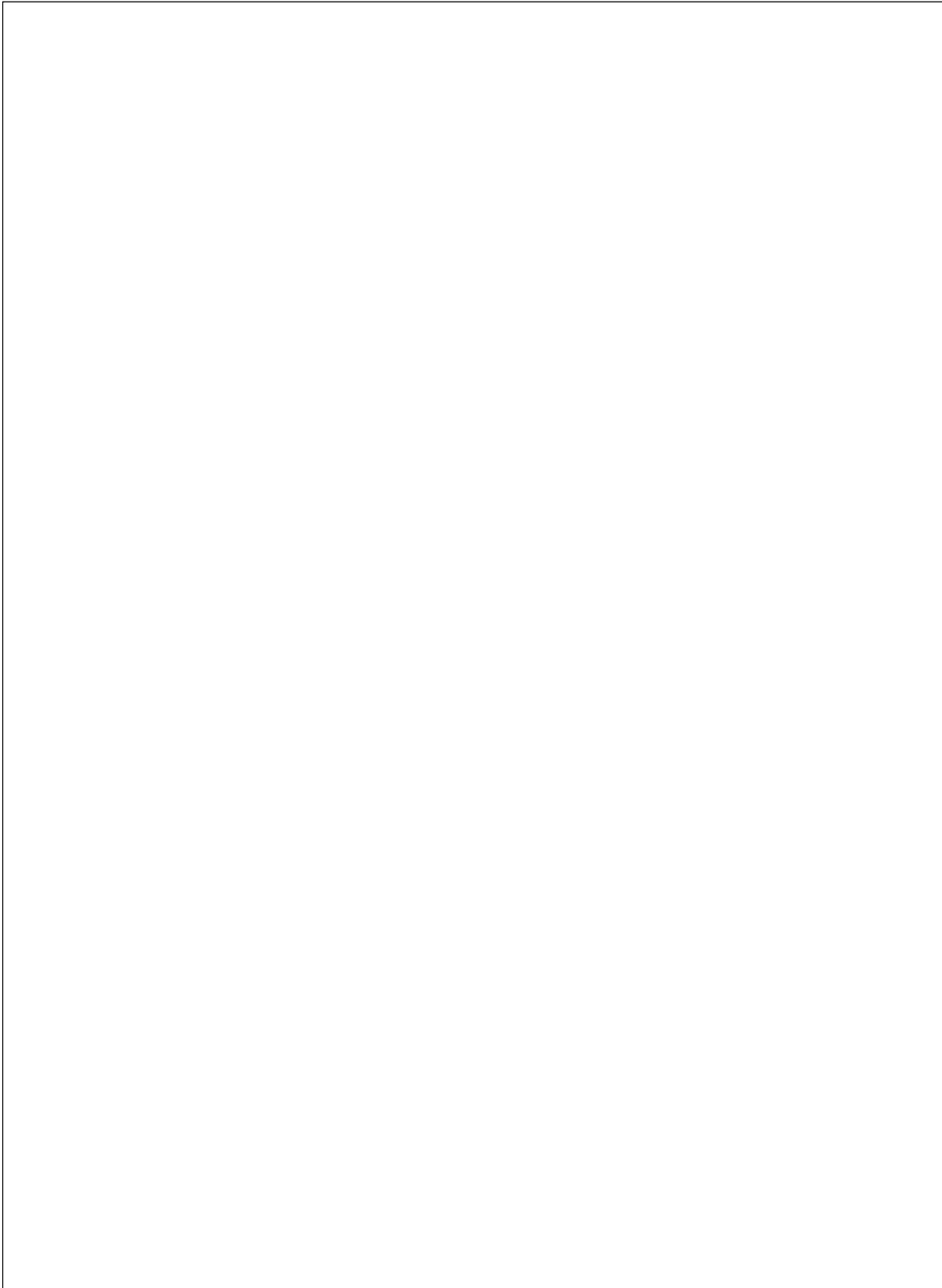
Devise a promotional campaign using social media to promote your product, explaining and assessing how and why you would use specific strategies and forms of social media to engage an audience.

**You may use bullet points, images, and/or diagrams to illustrate your answer.**

**You may consider using examples to support your points.**

**Use the space on the following page.**

DRAFT



This is the end of Section 1f

Q31	
	10

## **What you need to hand in after your external assessment**

At the end of the timed external assessment you'll hand in the following work to your Invigilator:

- this external assessment paper
- any extra paper you have used, securely attached.

Make sure that all your work, including any extra paper, is clearly identified with your name, centre number and learner number. Make sure you've signed the learner declaration on the front page of this external assessment paper.

Any remaining time left can be spent on checking over your responses.

**This is the end of the assessment.**

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Mark Scheme V1.1

Section 1a (unit 1)

1. 1 mark available

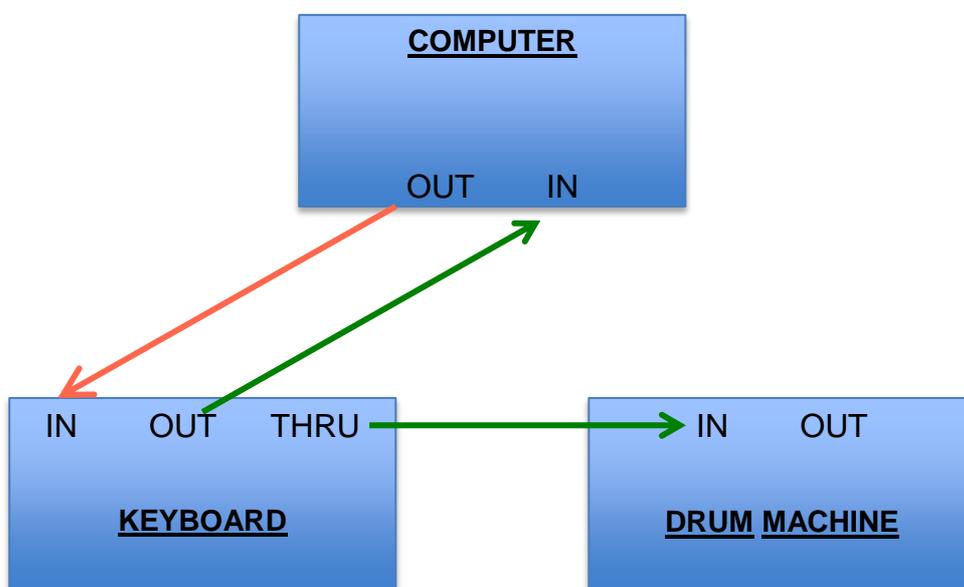
Award 1 mark for **B. Crossfade**

1. 1 mark available

Award 1 mark for **noise gate/gate**

3a. 2 marks available

Award 1 mark per correct connection drawn (shown in green)



3b. 2 marks available

1 mark for identification of function of Local Control Off

1 mark for explanation of why it would be used

eg so that keyboards internal sounds are only triggered by MIDI from the DAW and not by playing keys (1) to avoid double triggering/flaming/doubled notes (1)

#### **4. 2 marks available**

1 mark for identification of correct quantise setting (accept 1/16 or 1/8 only)

1 mark for explanation of reasoning

eg I would use a setting of 1/8 (1) which drags the notes to the nearest quaver as shown in the quantised patten (2)

#### **5. 2 marks available**

1 mark for identification of automation of filter

1 mark for expansion of detail

eg automation has been used to control the tone of the synthesisers filter (1) the automation is used to vary the filter frequency to make it brighter or darker (1)

**Total available marks for Section 1a: 10**

## Mark Scheme V1.1

### Section 1b (unit 2)

#### 6. 3 marks available

1 mark for identification of correct instruments to max 3 marks.

Accept.

Vocal/Male Voice  
Bass/Bass Guitar  
Guitar/Electric Guitar  
Organ/Hammond Organ  
Synth/Dub Siren

Do not accept

Drums  
Bass/Kick Drum  
Snare Drum  
Tom  
Hi-hat  
Cymbal  
Percussion

#### 7. 2 marks available

1 mark for identification of feature

1 mark for expansion

eg instruments are silent for first beat of the bar (1) giving syncopated/unusual accent effect (1)

#### 8. 2 marks available

1 mark for identification of three chord pattern

1 mark for expansion

eg 3 chords are used throughout the piece (1) in a I – IV – V (A/D/E/E) progression

### 9. 1 mark available

Accept **F#** only

### 10. 2 marks available

1 mark for identification of use of technology related to stylistic idea

- delay on vocals/synth
- heavy reverb on vocals
- spot delay on snare drum
- filtering of delay
- extreme panning of vocal delays/guitar/Hammond
- synth used to emulate dub siren/effects
- bass heavily compressed/EQ used to emphasise low frequencies

Do not accept references to recording medium/instrumentation

1 mark for expansion related to understanding of style

- effects and spot effects commonly used in reggae/dub
- filtering used to emulate tape delays commonly used in dub
- panning used to create sense of space and soundstage
- dub siren effect common in dub/reggae

Accept any related style

eg at the beginning of the example the vocals have been heavily processed with delay (1)  
extensive use of effects on voices and other instruments is a common stylistic trait of dub and reggae (1)

**Total available marks for Section 1b: 10**

## Mark Scheme V1.1

### Section 1c (unit 3)

#### 11. 1 mark available

Award 1 mark for **A. Cardioid**

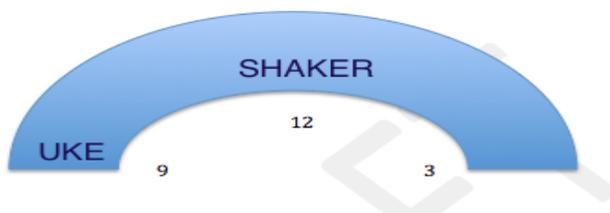
#### 12. 1 mark available

Award 1 mark for **pre-amp/microphone pre-amp/pre-amplifier**

Do not accept phantom power supply/DI box/audio interface

#### 13. 2 marks available

1 mark per correct placement of instrument shown on diagram



#### 14a. 1 mark available

Award 1 mark for correct identification of issue and time reference

eg 0.00 start of strummed chord is cut off

eg 0.39 editing click heard/bass guitar cut off

eg 0.39 – 0.45 click track and performance noise heard

#### 14b. 1 mark available

Award 1 mark for correct identification of issue and time reference

(Specifically looking for references to bass guitar mix balance issues caused by EQ settings here)

eg 0.28-0.29 high frequencies in bass guitar push through mix

### 15. 4 marks available

1 mark for correct identification of draperies (medium)

1 mark for explanation that absorption of draperies at 1kHz is high thus reducing unwanted content

1 mark for identifying that absorption at other frequencies is more limited

1 mark for comparison to any other listed absorber

eg the medium draperies would provide the best solution (1) as they absorb sound well at 1kHz which will reduce the unwanted reverb at this frequency (1) there will be some absorption at other frequencies (1) however this is the most appropriate solution as the other examples would have more effect across the frequency range. For example, the acoustic tile would absorb as well as the draperies at 1kHz but would also have the effect of more absorption at both 250Hz and 4kHz.

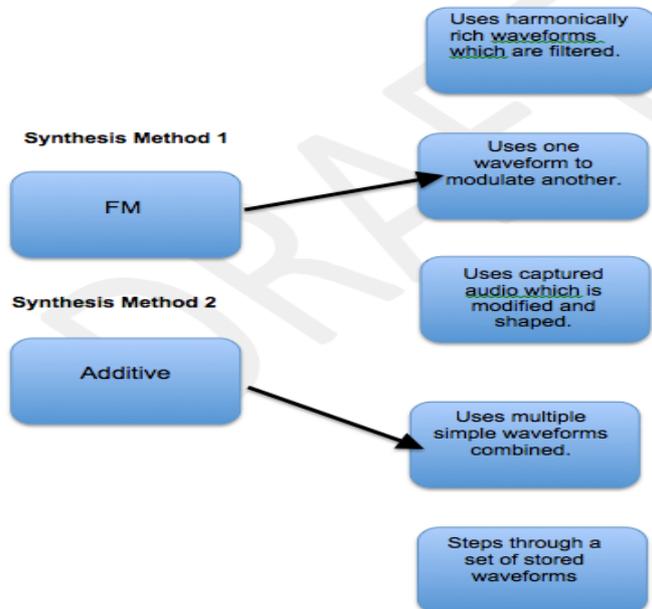
**Total available marks for Section 1c: 10**

## Mark Scheme V1.1

### Section 1d (unit 4)

#### 16. 2 marks available

1 mark per correct connection



#### 17. 2 marks available

1 mark for identification of fundamental at LF

1 mark for expansion related to harmonic content

eg the sound shown is loudest at approx. 50Hz (1) which a smaller peak at approx. 200 Hz and no real high frequencies present (1)

#### 18. 2 marks available

1 mark for identification of function of velocity switching

1 mark for expansion

eg I would use velocity switching to switch between different samples at different velocities (1) which would give a more realistic tonal effect for the snare sound (1)

#### 19. 1 mark available

Award 1 mark for **C. Sustain**

#### 20. 1 mark available

Accept **sine/sine wave** only

**21. 2 marks available**

1 mark for identification of LFO used to modulate amplitude

1 mark for expansion related to LFO

No award for simple statements eg 'wobbling sound'

eg the LFO has been connected to the volume output which causes the volume to go up and down (1) in sync with the LFO frequency (1) creating a wobble effect

**Total available marks for Section 1d: 10**

## Mark Scheme V1.1

### Section 1e (unit 5)

Note.

Extended response question 27 in this section tests the learner's knowledge of unit 5.

Extended response questions will potentially test different unit content from session to session. Therefore learners should be prepared to undertake extended responses from all units.

#### **22. 4 marks available**

1 + 1 per item to max. 4 marks.

1 mark for appropriate input source

Do not accept model names without description of source eg no marks for AKG C451 without 'condenser microphone'

1 mark for appropriate reason

eg:

Hi-Hat

Condenser Microphone (1)

Extended high frequency response and sensitivity to pick up detail of kit (1)

Drum Machine

DI Box (1)

To convert line level output to microphone level (1)

#### **23. 2 marks available**

1 mark for identification of noise rejection

1 mark for appropriate reason why this is useful in a live situation

eg balanced lines reject noise better than an unbalanced line (1) in a live situation this is particularly useful as long cable runs/electrical sources/lights are likely to lead to more noise being transmitted to the audio signal via the cable (1)

#### **24. 1 mark available**

Award 1 mark for **B. 4 ohms**

**25. 2 marks available**

1 mark for identification of audience/personal safety

1 mark for expansion (eg maintaining agreed levels/keeping within legal requirements or recommendations/ensuring that SPL does not increase over gig with fatigue)

eg it is important to monitor SPL as exposure to high SPL can damage hearing (1) monitoring levels ensures that SPL is kept within recommended limits throughout a performance (1)

**26. 1 mark available**

Award 1 mark for **powercon/powerCON/neutrik powerCON**

Do not accept speakon

## 27. 10 marks available

9-10	<p><b>Excellent.</b> Knowledge of concepts and specific equipment/technology fluent and with reference to appropriate terms and language. Balanced response which references contrasting theories/concepts.</p> <p>Broad range of relevant examples used to support ideas.</p> <p>Diagrammatic representations should be clear, relevant and give specific detail.</p> <p>Presentation skills fluent, coherent and clear throughout with engaging structure and conclusion in evidence.</p>
7-8	<p><b>Very Good.</b> Knowledge of concepts and equipment technology shows some insight with reference to generally appropriate terms and language. Some reference to contrasting theories/concepts, but not always comparative.</p> <p>Range of relevant examples in place used in reference to ideas.</p> <p>Diagrammatic work should be clear but lack some specific detail.</p> <p>Presentation skills coherent and clear throughout with logical structure and some concluding ideas.</p>
5-6	<p><b>Good.</b> Consistent reference to concepts and technology shows grasp of ideas. Use of terms and language may not always be relevant. Limited reference to contrasting theories/concepts.</p> <p>Limited range of examples, not always used with reference to ideas.</p> <p>Diagrammatic work should show basic detail.</p> <p>Presentation skills not always clear and may not be structurally coherent throughout. Conclusions limited.</p>
3-4	<p><b>Inconsistent.</b> Some broad reference to concepts/technology, but not specific. May display knowledge in some areas.</p> <p>May use an example but not expand upon them or tie them to ideas.</p> <p>Diagrammatic work may not be clear throughout or lacking in detail.</p> <p>Presentation skills may show some areas of clarity and coherence.</p>
1-2	<p><b>Limited.</b> Little reference to concepts/technology.</p> <p>No relevant examples referenced.</p> <p>Diagrammatic work may be inaccurate or be extremely limited in detail.</p> <p>Presentation skills limited in terms of coherence and clarity.</p>
0	<p><b>No rewardable material.</b></p> <p>No response or response inappropriate.</p>

Total available marks for Section 1e: 20

## Mark Scheme V1.1

### Section 1f (unit 6)

Note.

Extended response question 31 in this section tests the learner's knowledge of unit 6.

Extended response questions will potentially test different unit content from session to session. Therefore learners should be prepared to undertake extended responses from all units.

#### **28a. 1 mark available**

Award 1 mark for **C. PPL**

#### **28b. 1 mark available**

Award 1 mark for **contract**

#### **29. 4 marks available**

**1+1 for positive**

**1+1 for negative**

1 mark for identification of positive aspect

1 mark for relevant expansion

eg one positive aspect of selling music on CD is that CDs can be sold as physical products at gigs and events (1) unlike downloads. This means that you may potentially increase your profits at gigs by selling CDs. (1) One negative aspect is the cost of duplicating CDs (1) this means that every CD you sell has cost you money to produce (1) unlike a download which is mostly a one time cost.

#### **30a. 2 marks available**

1 mark for calculation of correct total = £240

1 mark for calculation of number of more downloads required = 400

#### **30b. 2 marks available**

1 mark for calculation of correct total running cost = £680

1 mark for calculation of break-even sale price = £6.80

### 31. 10 Marks Available

<b>9-10</b>	<p><b>Excellent.</b> Knowledge of concepts and specific equipment/technology fluent and with reference to appropriate terms and language. Balanced response which references contrasting theories/concepts.</p> <p>Broad range of relevant examples used to support ideas.</p> <p>Diagrammatic representations should be clear, relevant and give specific detail.</p> <p>Presentation skills fluent, coherent and clear throughout with engaging structure and conclusion in evidence.</p>
<b>7-8</b>	<p><b>Very Good.</b> Knowledge of concepts and equipment technology shows some insight with reference to generally appropriate terms and language. Some reference to contrasting theories/concepts, but not always comparative.</p> <p>Range of relevant examples in place used in reference to ideas.</p> <p>Diagrammatic work should be clear but lack some specific detail.</p> <p>Presentation skills coherent and clear throughout with logical structure and some concluding ideas.</p>
<b>5-6</b>	<p><b>Good.</b> Consistent reference to concepts and technology shows grasp of ideas. Use of terms and language may not always be relevant. Limited reference to contrasting theories/concepts.</p> <p>Limited range of examples, not always used with reference to ideas.</p> <p>Diagrammatic work should show basic detail.</p> <p>Presentation skills not always clear and may not be structurally coherent throughout. Conclusions limited.</p>
<b>3-4</b>	<p><b>Inconsistent.</b> Some broad reference to concepts/technology, but not specific. May display knowledge in some areas.</p> <p>May use an example but not expand upon them or tie them to ideas.</p> <p>Diagrammatic work may not be clear throughout or lacking in detail.</p> <p>Presentation skills may show some areas of clarity and coherence.</p>
<b>1-2</b>	<p><b>Limited.</b> Little reference to concepts/technology.</p> <p>No relevant examples referenced.</p> <p>Diagrammatic work may be inaccurate or be extremely limited in detail.</p> <p>Presentation skills limited in terms of coherence and clarity.</p>
<b>0</b>	<p><b>No rewardable material.</b></p> <p>No response or response inappropriate.</p>

Total available marks for Section 1f: 20