

**PREPARING TO STUDY JAZZ AT THE  
NEW ZEALAND SCHOOL OF MUSIC**



**The Jazz Theory Entrance Test**

**2010 STUDY GUIDE**

# The Jazz Theory Entrance Test

## Study Guide

Every concept that you will study in jazz theory, either for this test or as a student at the NZSM is important and directly applicable to you as a jazz performer and improviser. This is information that you're going to want to remember forever, so take your time going through this material and learn it thoroughly.

The test is made up of five sections where you will be asked to:

1. Provide chord symbols for groups of noteheads on a staff.
2. Provide noteheads on a staff for the given chord symbols.
3. Write scales using noteheads.
4. Identify Major Key signatures.
5. List the Order of Sharps and the Order of Flats.

First, you'll need to know some basic information about chords and scales starting with the major scales. Hopefully you're already practicing your major scales every day. In order to spell the notes of all of the possible major scales, you'll need to understand something about keys and key signatures.

### Order of Flats and Sharps

Start by memorizing the order of flats and sharps. This is the order that the sharps and flats appear in any key signature. Notice that the order of sharps is the same as the order of flats, only backwards.

*Figure 1, Order of Flats and Sharps*

<b>Order of Flats:</b>	<b>B</b>	<b>E</b>	<b>A</b>	<b>D</b>	<b>G</b>	<b>C</b>	<b>F</b>
<b>Order of Sharps:</b>	<b>F</b>	<b>C</b>	<b>G</b>	<b>D</b>	<b>A</b>	<b>E</b>	<b>B</b>

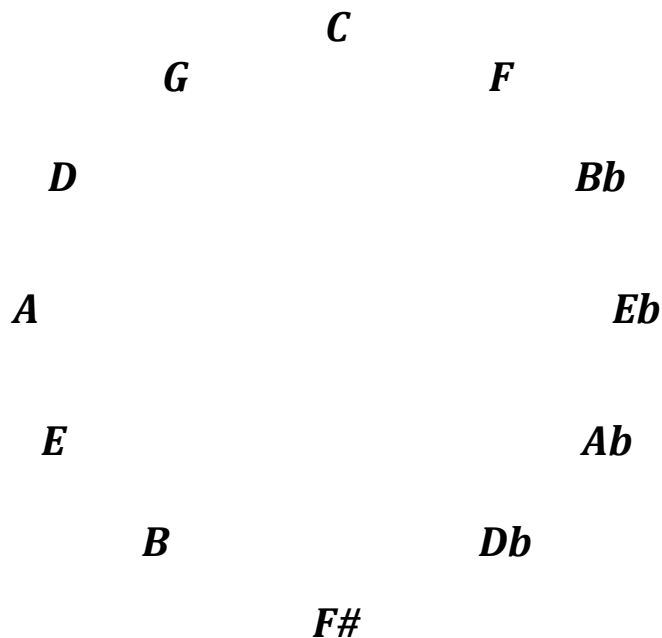
Look at any key signature in a piece of music or all of the key signatures in section IV of the Practice Theory Entrance Test. No matter how many flats or sharps show up in a key signature, they always show up in the same order: BEADGCF or FCGDAEB.

Say these to yourself many times and memorize them: "BEADGCF, FCGDAEB, BEADGCF, FCGDAEB."

## Circle of 5ths

The notes that make up the order of flats and sharps come directly from the **Circle of 5ths**, an important sequence of the 12 chromatic notes that you will use extensively in jazz study. Look on the left side of the circle and you'll see the order of flats and sharps right in there.

*Figure 2. Circle of 5ths*



## Using the Order of Flats and Sharps

You can use the order of flats and sharps to determine how many flats or sharps are in a key signature. Compare *figures 3. and 4.* with the following list of all of the major key signatures (*figure 5*). The numbers added to the order of flats and sharps are the numbers of flats and sharps in all of the major keys.

The key of C Major has no flats or sharps, so we can label "C" as zero in both diagrams. All of the notes are numbered in order: 0, 1, 2, 3, 4, 5, 6, and 7.

On the top row, the keys are the same as the letter names (C and F for flats, C, G, D, A, E, B for sharps). In both cases, when you get to the end of the row and start numbering underneath, you need to add the appropriate flat or sharp to the name of each key (Bb, Eb, Ab, Db, Gb, Cb for flats, and F# and C# for sharps).

Eventually you will have your key signatures memorized but if you don't yet, you might find it helpful to write out the order of flats and sharps and the numbers

Figure 3. Flat Keys:

					<b>0</b>	<b>1</b>
B	E	A	D	G	C	F
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	

Figure 4. Sharp Keys:

	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
F	C	G	D	A	E	B
<b>6</b>	<b>7</b>					

Figure 5. Key Signatures:

**Key Signatures Using Sharps**

C Major – no sharps or flats

G Major – one sharp

D Major – two sharps

A Major – three sharps

E Major – four sharps

B Major – five sharps

F# Major – six sharps

C# Major – seven sharps

**Key Signature Using Flats**

C Major – no sharps or flats

F Major – one flat

Bb Major – two flats

Eb Major – three flats

Ab Major – four flats

Db Major – five flats

Gb Major – six flats

Cb Major – seven flats

If you can spell all of the notes in the major scales and know which notes are sharp or flat in the different key signatures, you'll be able to spell chords and other scales much more easily.

**SPELLING CHORDS**

There are 12 notes in a chromatic scale (C, C#, D, Eb, E, F, F#, G, Ab, A, Bb, and B) and chords can be spelled starting on any of these 12 notes. Most jazz chord symbols describe chords with four notes (also called 7<sup>th</sup> chords), and most contain the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> note of a particular scale. Before you start spelling four-note 7<sup>th</sup> chords, learn the three-note chords called triads.

## MAJOR TRIADS

Start by memorizing your 12 major triads. A triad is a 3-note chord. A **major triad** is made up of the 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> notes of a major scale. Memorize these. All other chords will be built on these triads or be variations of them.

*Figure 6. Major Triads*

C E G	D <sub>b</sub> F A <sub>b</sub>	D F <sub>♯</sub> A	E <sub>b</sub> G B <sub>b</sub>	E G <sub>♯</sub> B	F A C
F <sub>♯</sub> A <sub>♯</sub> C <sub>♯</sub>	G B D	A <sub>b</sub> C E <sub>b</sub>	A C <sub>♯</sub> E	B <sub>b</sub> D F	B D <sub>♯</sub> F <sub>♯</sub>

## 7<sup>TH</sup> CHORDS

The first section of the written theory test involves writing in the correct chord symbol for a group of given notes. There are five different types of chord symbols that you'll need to know in this section: major 7<sup>th</sup>, minor 7<sup>th</sup>, dominant 7<sup>th</sup>, half-diminished 7<sup>th</sup>, and fully diminished 7<sup>th</sup>.

All of the chords are written in root position, meaning the root of each chord (or the letter used to name the chord) is the lowest note on the bottom staff.

The chord symbols that we will want to use for these chords are the following:

*Figure 7. Basic Chord Symbols*

<b>MAJOR 7:</b>	$\Delta 7$	OR WITH A ROOT:	C $\Delta 7$
<b>MINOR 7:</b>	-7	OR WITH A ROOT:	C-7
<b>DOMINANT 7:</b>	7	OR WITH A ROOT:	C7
<b>HALF DIMINISHED 7:</b>	$\flat 7$	OR WITH A ROOT:	C $\flat 7$
<b>FULLY DIMINISHED:</b>	$\circ 7$	OR WITH A ROOT:	C $\circ 7$

All of the chords that you'll need to know (by this point) are created by "stacking thirds." The musical alphabet: C D E F G A B C, is made up of all "seconds" so in order to spell most chords, we skip every other note of the musical alphabet to create a sequence of "thirds."

*Figure 8, Spelling Chords in 3rds*

C	D	E	F	G	A	B	C
X		X		X		X	

Once we know that our chord starts on "C," we know that we need a C, E, G, and B to spell it. All of the "C" chords that you need to know use the same letter names in their spellings. We will just add sharps or flats to change the sound.

All of these chords can be related to a major scale, so if you can spell all of the notes of the major scales/key signatures, you'll be in good shape. Take your time reading through the following formulas and practice writing and saying the spellings for each type of chord.

Notice that each chord type on the list is only different from the previous chord type by one note.

*Figure 9: Chord Formulas*

**MAJOR 7** chords are created using the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> notes of a major scale

**DOMINANT 7** chords use the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and **lowered** 7<sup>th</sup> notes of a major scale

**MINOR 7** chords use the 1<sup>st</sup>, **lowered** 3<sup>rd</sup>, 5<sup>th</sup>, and **lowered** 7<sup>th</sup> notes of a major scale

**HALF DIMINISHED 7** chords use the 1<sup>st</sup>, **lowered** 3<sup>rd</sup>, **lowered** 5<sup>th</sup>, and **lowered** 7<sup>th</sup> notes of a major scale

**FULLY DIMINISHED 7** chords use the 1<sup>st</sup>, **lowered** 3<sup>rd</sup>, **lowered** 5<sup>th</sup>, and **double lowered** 7<sup>th</sup> notes of a major scale

Figure 10: Chord Table

<u>CHORD TYPE</u>	<u>DIGITS</u>	<u>SYMBOL</u>	<u>SPELLING</u>
MAJOR 7	1 3 5 7	C $\Delta$ 7	C E G B
DOMINANT 7	1 3 5 b7	C7	C E G B $\flat$
MINOR 7	1 b3 5 b7	C-7	C E $\flat$ G B $\flat$
HALF DIMINISHED 7	1 b3 b5 b7	C $\delta$ 7	C E $\flat$ G $\flat$ B $\flat$
FULLY DIMINISHED 7	1 b3 b5 bb7	C $\circ$ 7	C E $\flat$ G $\flat$ B $\flat\flat$

## MODES OF THE MAJOR SCALE

Once you've learned to spell the notes of all of the major scales, you'll be able to spell the "modes" of all of these scales as well. There are seven notes in each major scale and a different scale can be created, starting on each of the seven different notes. These are the "modes" of that scale.

1. The first mode of each major scale is called the **Ionian Scale** and is exactly the same as the major scale:

**C IONIAN: C D E F G A B C**

2. The second mode of each major scale is called the **Dorian Scale** and can be spelled like a major scale with a lowered 3<sup>rd</sup> and lowered 7<sup>th</sup>.

**D DORIAN: D E F G A B C D**

3. The third mode of each major scale is called the **Phrygian Scale** and can be spelled like a major scale with a lowered 2<sup>nd</sup>, lowered 3<sup>rd</sup>, lowered 6<sup>th</sup>, and lowered 7<sup>th</sup>.

**E PHRYGIAN: E F G A B C D E**

4. The fourth mode of each major scale is called the **Lydian Scale** and can be spelled like a major scale with a raised 4<sup>th</sup>.

**F LYDIAN: F G A B C D E F**

5. The fifth mode of each major scale is called the **Mixolydian Scale** and can be spelled like a major scale with a lowered 7<sup>th</sup>.

**G MIXOLYDIAN: G A B C D E F G**

6. The sixth mode of each major scale is called the **Aeolian Scale** and can be spelled like a major scale with a lowered 3<sup>rd</sup>, lowered 6<sup>th</sup>, and lowered 7<sup>th</sup>.

**A AEOLIAN: A B C D E F G A**

7. The seventh mode of each major scale is called the **Locrian Scale** and can be spelled like a major scale with a lowered 2<sup>nd</sup>, lowered 3<sup>rd</sup>, lowered 5<sup>th</sup>, lowered 6<sup>th</sup>, and lowered 7<sup>th</sup>.

**B LOCRIAN: B C D E F G A B**



Another way of looking at the Major modes is *Figure 10*: where all the modes of one major scale have the same notes in the same order. They just start on a different note (or degree) of that scale. If you memorize the numbers that correspond with each mode (Ionian=1, Dorian=2, Phrygian=3, Lydian=4, Mixolydian=5, Aeolian=6, and Locrian=7) you can always relate back to the major scale (also called the “parent scale”) of each mode.

*Figure 11: Modes of the C Major Scale*

C	D	E	F	G	A	B	C		C	IONIAN
	D	E	F	G	A	B	C	D		D DORIAN
		E	F	G	A	B	C	D	E	E PHRYGIAN
			F	G	A	B	C	D	E	F LYDIAN
G				G	A	B	C	D	E	F G
	A				A	B	C	D	E	F G A
		B				B	C	D	E	F G A B

**Example:** if you are asked to write an Ab Mixolydian scale (as you are in the Practice Test), you can either use the above formula where Mixolydian is a Major Scale with a lowered 7.

Ab Major is spelled: Ab, Bb, C, Db, Eb, F, G, Ab.

Lower the 7<sup>th</sup> to make it a Mixolydian Scale.

Ab Mixolydian is spelled: Ab, Bb, C, Db, Eb, F, **Gb**, Ab.

Or

Mixolydian is the 5<sup>th</sup> Mode of the Major Scale.

Ab is the scale being asked for.

Ab is the 5<sup>th</sup> note in the Db Major Scale (Db, Eb, F, Gb, Ab, Bb, C, Db)

Ab Mixolydian has the same notes as Db Major but with Ab as the root.

Ab Mixolydian is spelled: Ab, Bb, C, Db, Eb, F, Gb, Ab.

We get the same answer using the two different methods.

Practice writing modes as in *Figure 10*: by starting with any major scale as the parent scale and writing the corresponding Dorian, Phrygian, Lydian, Mixolydian, Aeolian and Locrian scales.

## SYMMETRICAL SCALES

**Symmetrical Scales** are scales created using a repeated pattern of intervals. Some scales are made up of either only  $\frac{1}{2}$  steps (the chromatic scale), only whole steps (the whole tone scale), or a pattern or alternating half steps and whole steps (the two types of diminished scales).

1. **The Chromatic Scale** is made up of only  $\frac{1}{2}$  steps and contains every note that is possible to play in traditional Western music. In order to spell the chromatic scale, start on any note and add the next available note. Keep adding until you reach the first note again. You can start a chromatic scale on any of the 12 notes, but every chromatic scale contains the same notes regardless of where you start.

**C CHROMATIC SCALE: C C# D Eb E F F# G Ab A Bb B C**

2. **The Half - Whole Diminished Scale** is created using the intervals in the scale's name. Start with any root and add a note that is a half step above. Then add a note a whole step above, then a half step, whole step. Continue the half step/whole step pattern until you reach the root again. In the example using "C" as the root, Db is a half step above C, Eb is a whole step above Db, E is a half step above Eb, F# is a whole step above E, and so on.

**C  $\frac{1}{2}$ -W DIMINISHED: C Db Eb E F# G Ab C**

3. **The Whole - Half Diminished Scale** is very similar to the Half - Whole Diminished Scale, only the pattern of  $\frac{1}{2}$  steps and whole steps is reversed.

**C W- $\frac{1}{2}$  DIMINISHED: C D Eb F Gb Ab A B C**

4. **The Whole Tone Scale** is made up of only whole tones, or whole steps.

**C WHOLE TONE: C D E F# Ab Bb C**