

تمارين

Exercises

First: The Byzantine Musical Scale

أولاً: تمارين على السلم الموسيقي:

TIME SIGNATURES

قياس 2 Μέτρον

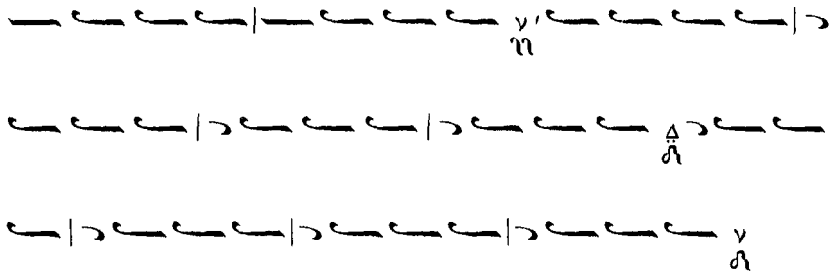
(1)

M.3

(2)

M.4

(3)



Second: Ascending, Descending, Duration, and Combined notes

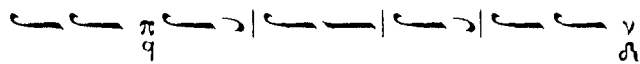
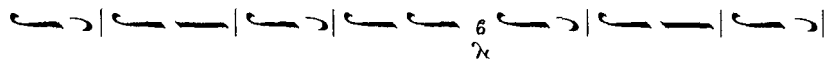
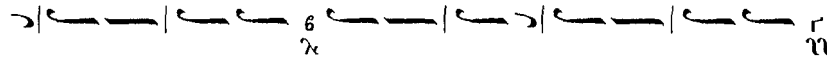
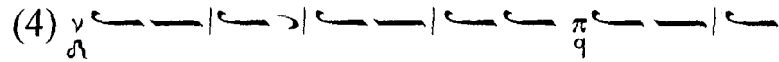
ثانياً: تمارين على الصعود والنزول والزمن والعلامات المركبة

1. Ascending and Descending one note:

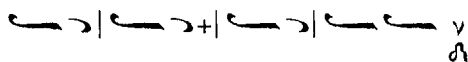
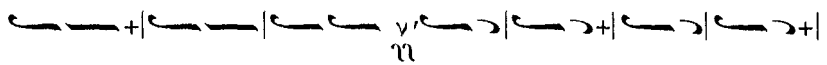
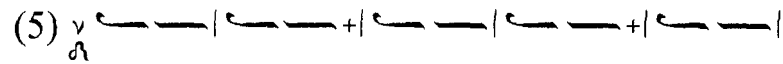
١- تمارين على صعود ونزول درجة واحدة:



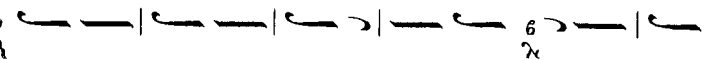
M.2




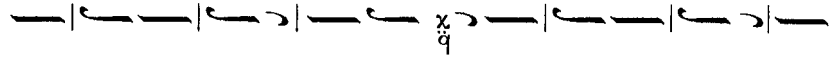
M.2

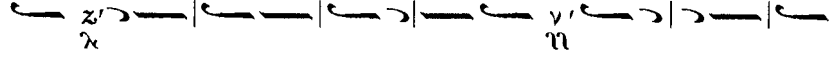


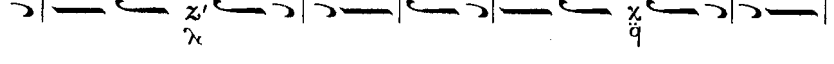
M.2

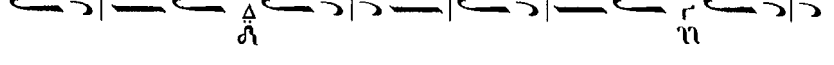
(6) $\frac{y}{d\lambda}$  $\frac{6}{\lambda}$

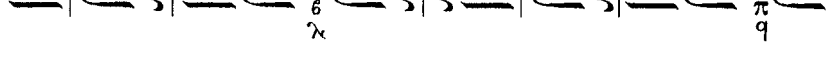
 $\frac{r}{n}$ $\frac{\Delta}{d\lambda}$


 $\frac{x}{q}$

 $\frac{z'}{\lambda}$ $\frac{y'}{n}$

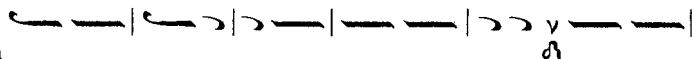
 $\frac{z'}{\lambda}$ $\frac{x}{q}$

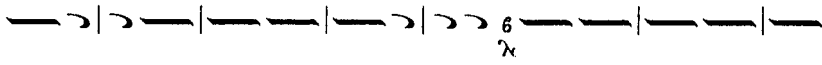
 $\frac{\Delta}{d\lambda}$ $\frac{r}{n}$

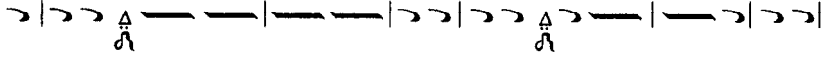
 $\frac{6}{\lambda}$ $\frac{\pi}{q}$

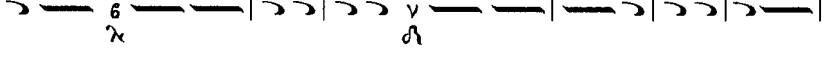
 $\frac{y}{d\lambda}$


M.2

(7) $\frac{y}{d\lambda}$  $\frac{y}{d\lambda}$

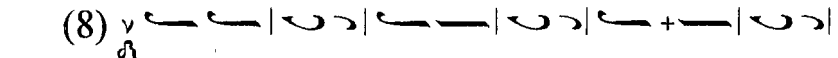
 $\frac{6}{\lambda}$

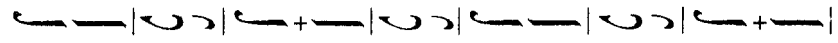
 $\frac{\Delta}{d\lambda}$ $\frac{\Delta}{d\lambda}$


 $\frac{6}{\lambda}$ $\frac{y}{d\lambda}$

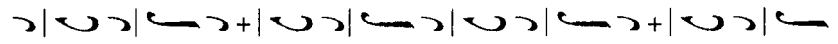
 $\frac{y}{d\lambda}$

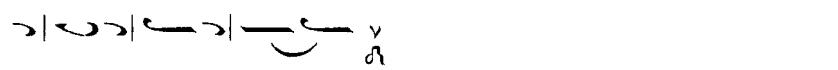
M.2

(8) $\frac{y}{d_1}$ 

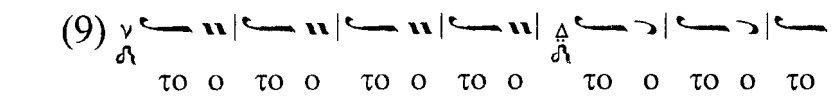







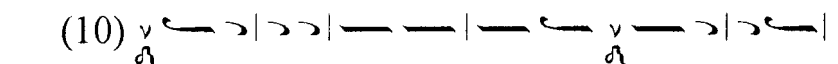


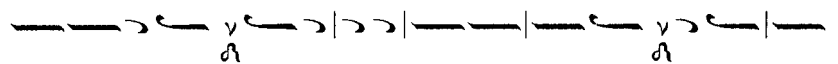
M.2


(9) $\frac{y}{d_1}$ 



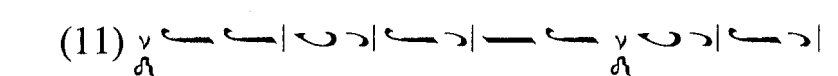
M.2

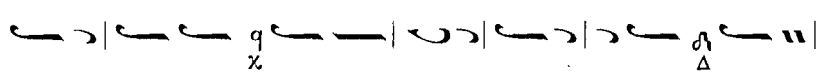
(10) $\frac{y}{d_1}$ 






M.2

(11) $\frac{y}{d_1}$ 





2. Signs that add duration: ٢- تمارين على الزمن:

ت . . .

M.2

(12) $\overset{v}{\delta} \text{ — | — | — | — } \overset{r}{\eta} \text{ — | — | — | — } \overset{v'}{\eta}$

$\overset{v}{\delta} \text{ — | — | — } \overset{\Delta}{\delta} \text{ — | — | — } \overset{v}{\delta}$

M.3

(13) $\overset{v}{\delta} \text{ — | — | — | — } \overset{r}{\eta} \text{ — | — | — | — } \overset{v'}{\eta}$

$\overset{v}{\delta} \text{ — | — | — } \overset{\Delta}{\delta} \text{ — | — | — } \overset{v}{\delta}$

M.2

(14) $\overset{v}{\delta} \text{ — | — | — } \overset{\pi}{q} \text{ — | — | — } \overset{\delta}{\lambda}$

$\overset{\delta}{\lambda} \text{ — | — | — } \overset{r}{\eta} \text{ — | — | — } \overset{\delta}{\lambda}$

$\overset{\delta}{\lambda} \text{ — | — | — } \overset{\pi}{q} \text{ — | — | — } \overset{\delta}{\lambda}$

$\overset{v}{\delta} \text{ — | — } \overset{v}{\delta}$

M.4

(15) $\overset{v}{\delta} \text{ — | — } \overset{\delta}{\lambda} \text{ — | — } \overset{\delta}{\lambda}$

$\overset{v}{\delta} \text{ — | — } \overset{v}{\delta} \text{ — | — } \overset{v}{\delta}$

M.2

(16) $\frac{y}{\text{A}}$ $\frac{r}{\text{A}}$ $\frac{v}{\text{A}}$ $\frac{z}{\text{A}}$ $\frac{q}{\text{A}}$

M.2

(17) $\frac{y}{\text{A}}$ $\frac{r}{\text{A}}$ $\frac{v}{\text{A}}$ $\frac{z}{\text{A}}$ $\frac{q}{\text{A}}$

M.4

(18) $\frac{y}{\text{A}}$ $\frac{r}{\text{A}}$ $\frac{v}{\text{A}}$ $\frac{z}{\text{A}}$ $\frac{q}{\text{A}}$

3. Combined signs and notes:

٣- تمارين على إشارات مركبة مختلفة:

$\frac{y}{\text{A}}$ $\frac{r}{\text{A}}$ $\frac{v}{\text{A}}$ $\frac{z}{\text{A}}$ $\frac{q}{\text{A}}$

M.2

(19) $\frac{y}{\text{A}}$ $\frac{r}{\text{A}}$ $\frac{v}{\text{A}}$ $\frac{z}{\text{A}}$ $\frac{q}{\text{A}}$

$$\begin{aligned}
& \rightarrow \rightarrow + | \text{---} | \text{---} | \text{---} \frac{\gamma'}{\lambda} \text{---} \rightarrow | \rightarrow | \rightarrow + | \text{---} | \text{---} | \rightarrow | \\
& \rightarrow | \rightarrow + | \text{---} | \text{---} | \rightarrow | \rightarrow | \rightarrow \frac{\pi}{q} \text{---} | \text{---} | \rightarrow | \rightarrow | \rightarrow \\
& \rightarrow | \text{---} \frac{\gamma}{\lambda}
\end{aligned}$$

M.4

$$\begin{aligned}
(1) (20) \frac{\gamma}{\lambda} \text{---} \text{---} \rightarrow | \text{---} \text{---} + | \text{---} \text{---} \rightarrow | \text{---} \text{---} + | \text{---} \\
\text{---} \rightarrow | \text{---} \text{---} \frac{\gamma}{\lambda} \text{---} \rightarrow | \text{---} \text{---} \frac{6}{\lambda} \text{---} \rightarrow | \text{---} \text{---} \frac{\pi}{q} \text{---} \text{---} \\
\rightarrow | \text{---} \text{---} \frac{\gamma}{\lambda}
\end{aligned}$$

M.3

$$\begin{aligned}
(2) (21) \frac{\gamma}{\lambda} \text{---} \text{---} | \text{---} \text{---} + | \text{---} \text{---} | \text{---} \text{---} + | \text{---} \text{---} | \text{---} \\
\text{---} + | \text{---} \text{---} | \text{---} \text{---} \frac{\pi}{q} \text{---} \text{---} | \text{---} \text{---} | \text{---} \text{---} | \text{---} \text{---} \frac{\gamma}{\lambda}
\end{aligned}$$

M.4

$$\begin{aligned}
(3) (22) \frac{\gamma}{\lambda} \text{---} \text{---} \rightarrow | \text{---} \text{---} \rightarrow + | \text{---} \text{---} \rightarrow | \text{---} \text{---} \rightarrow + | \\
\text{---} \text{---} \rightarrow | \text{---} \text{---} \frac{\gamma'}{\lambda} \text{---} \text{---} | \text{---} \text{---} \frac{\Delta}{\lambda} \text{---} \text{---} | \text{---} \text{---} \frac{6}{\lambda} \\
\text{---} \text{---} | \text{---} \text{---} \frac{\gamma}{\lambda} \text{---} \text{---} | \text{---} \text{---} \frac{\gamma}{\lambda}
\end{aligned}$$

-
- $\text{---} \text{---} = \text{---} \text{---} \text{---} - 1$
 - $\text{---} \text{---} = \text{---} \text{---} \text{---} - 2$
 - $\text{---} \text{---} = \text{---} \text{---} \text{---} - 3$

M.2

(23.A) ν δ ϵ λ δ π δ
 Σε υ μου μεν Σε ε ευ λο γου μεν Σοι
 ευ χα ρι στου μεν Κυ ρι ε και δε ο με θα α σου
 ο Θε ος η μων

M.2

(23.B) ν δ ϵ λ δ π δ
 رَبِّكَ يَا نُّكَ يَا إِي بِحُ سَبِّ نُّكَ يَا إِي
 لُبُّ نَطُّكَ لِي إِي وَ رَبِّ يَا رُكُّ نَشُّكَ يَا إِي
 نَاهُ لِي يَا

M.4

(24.A) ν δ ϵ λ δ π δ
 Κυ ρι ε ε λε η σον

M.4

(24.B) ν δ ϵ λ δ π δ
 ارحم ب رب يا

4. Ascending and Descending two notes:

٤- تمرین علی صعود و نزول درجه‌تین:



M.4

(25) $\overset{y}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{y}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{y}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{y}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } |$

" $\overset{\pi}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{\pi}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{\pi}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{\pi}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } |$

" $\overset{\epsilon}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } |$

" $\overset{r}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } |$

" $\overset{\Delta}{\delta} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } |$

" $\overset{x}{q} \text{ — — — } | \overset{y'}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{y'}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{y'}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{y'}{n} \text{ — — — } |$

" $\overset{z'}{\lambda} \text{ — — — } | \overset{\pi'}{q} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\pi'}{q} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\pi'}{q} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } | \overset{\pi'}{q} \text{ — — — } |$

" $\overset{y'}{n}$

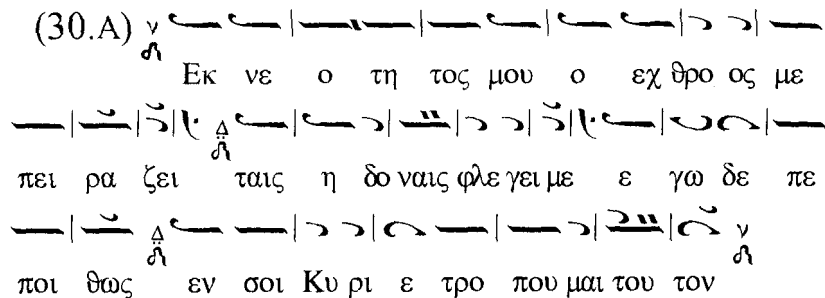
M.4

(26) $\overset{y}{\delta} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{z'}{\lambda} \text{ — — — } |$

" $\overset{y'}{n} \text{ — — — } | \overset{x}{q} \text{ — — — } | \overset{\Delta}{\delta} \text{ — — — } | \overset{r}{n} \text{ — — — } | \overset{\epsilon}{\lambda} \text{ — — — } | \overset{\pi}{q} \text{ — — — } |$

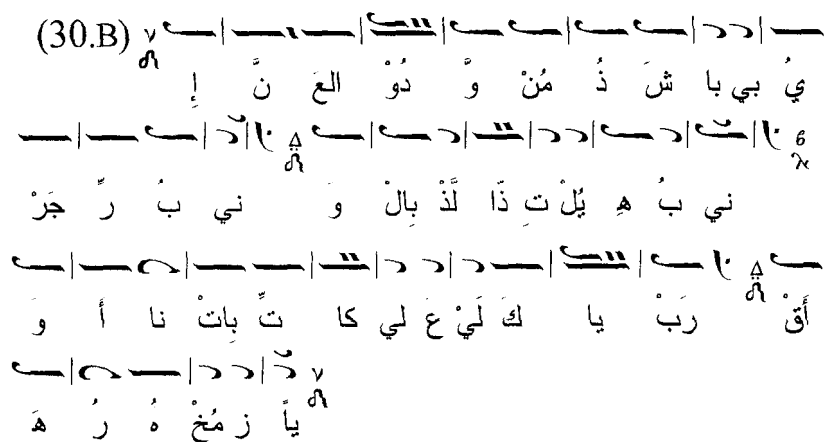
" $\overset{y}{\delta} \text{ — — — } | \overset{y}{\delta} \text{ — — — } | \overset{y}{\delta} \text{ — — — } | \overset{y}{\delta} \text{ — — — } |$

M.2

(30.A) 

Εκ νε ο τη τος μου ο εχ θρο ος με
 πει ρα ζει ταις η δο ναις φλε γει με ε γω δε πε
 ποι θως εν σοι Κυ ρι ε τρο που μαι του τον

M.2

(30.B) 

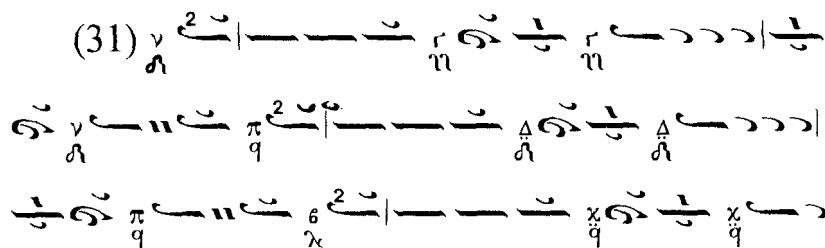
يُ بِي يَا شَ ذُ مَنْ وَ دُو الْعِ نَّ إِ
 نِي بُ هُ يَلَّتِ ذَا لَذَّ بَالٍ وَ نِي بُ رَّ جِرْ
 أَقْ رَبَّ يَا كَ لِي غَ لِي كَا تَّ بَاتَ نَا أ وَ
 يَا زَمَخُ هُ رُ هُ

٥- تمارين على صعود ونزول ثلاث درجات:

5. Ascending and Descending three notes:



M.4

(31) 

$$\begin{array}{c}
\frac{f}{g} \frac{x}{q} | \text{---} | \text{---} | \text{---} | \frac{f}{g} | \frac{\pi}{q} | \text{---} | \text{---} | \frac{\epsilon}{\lambda} | \text{---} | \\
\text{---} | \text{---} | \frac{z'}{\lambda} | \frac{f}{g} | \frac{z'}{\lambda} | \text{---} | \text{---} | \frac{f}{g} | \frac{\epsilon}{\lambda} | \text{---} | \\
\text{---} | \frac{r}{\eta} | \text{---} | \text{---} | \frac{v}{\eta} | \frac{f}{g} | \frac{v}{\eta} | \text{---} | \text{---} | \\
\frac{f}{g} | \frac{r}{\eta} | \text{---} | \text{---} | \frac{v}{\delta}
\end{array}$$

M.4

$$(35) \frac{v}{\delta} | \frac{f}{g} | \frac{\Delta}{\delta} | \frac{f}{g} | \frac{x}{q} | \frac{f}{g} | \frac{z'}{\lambda} | \frac{f}{g} | \frac{v}{\eta} | \frac{f}{g}$$

$$\frac{r}{\eta} | \frac{\epsilon}{\lambda} | \frac{\pi}{q} | \frac{v}{\delta} | \frac{v}{\delta}$$

M.2

$$\begin{array}{c}
(1) (36) \frac{v}{\delta} | \text{---} | \text{---} | \text{---} | \frac{\pi}{q} | \text{---} | \text{---} | \text{---} | \\
\text{---} | \text{---} | \frac{v}{\delta} | \text{---} | \text{---} | \text{---} | \text{---} | \text{---} | \\
\text{---} | \text{---} | \text{---} | \frac{v}{\delta}
\end{array}$$

M.2

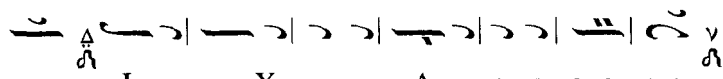
$$(37.A) \frac{v}{\delta} | \text{---} | \text{---} | \frac{\Delta}{\delta} | \text{---} | \text{---} | \text{---} | \text{---} |$$

Κυ ρι ε βα σι λευ Ε που ρα νι ε θε ε

$$\frac{v}{\delta} | \text{---} | \text{---} | \text{---} | \text{---} | \text{---} | \text{---} | \text{---} |$$

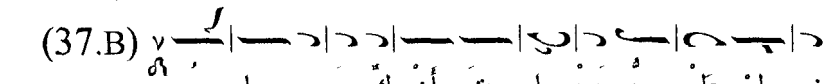
Πα τερ παν το κρα τος κυ ρι ε Υι ε μο νο γε

$$\text{---} | \text{---} | \text{---} = \text{---} | \text{---} | \text{---} \quad - 1$$

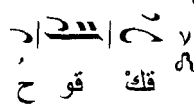


 ves I η σου Χρι στε και Α α γι ον πνευ μα

 M.2

(37.B) 

 ني لِمَ عَلٰى بَرْبِ يٰ تَ اَنْ كَرَّ بِا م



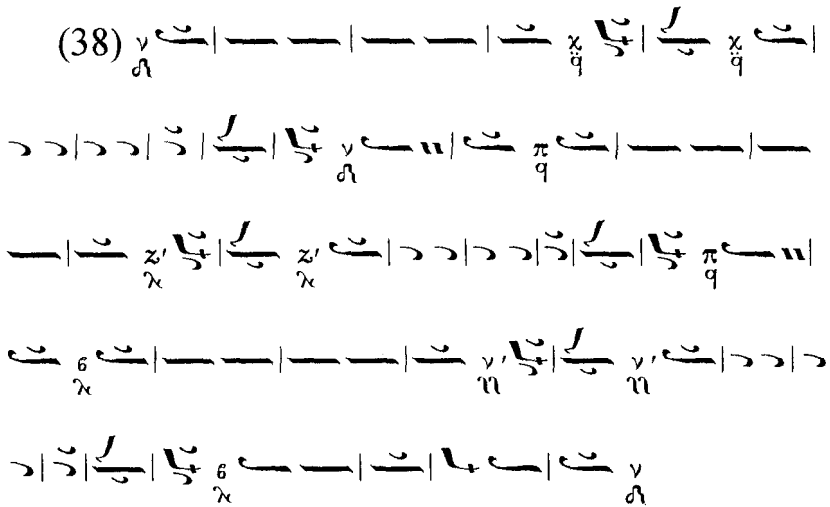
 قَكَ قَوْح

۷- تمرین علی صعود و نزول خمس درجات:

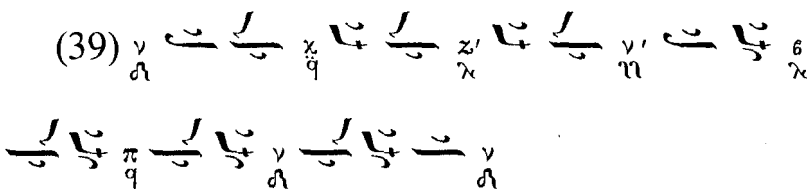
7. Ascending and Descending five notes:



M.2

(38) 

M.4

(39) 

يا بي لو لي هـ وات ما

Third: SIGNS THAT DIVIDE THE BEAT

ثالثاً: تمارين على بعض علامات الوقت:

1. Exercises on Gorgon: ١- تمارين على غورغون:

M.2

(45)

M.2

(46)

M.2

(47)

M.4

$$(71) \frac{d}{dx} \left(\frac{1}{x} - \frac{1}{x^2} + \frac{1}{x^3} - \frac{1}{x^4} \right) = \frac{1}{x^2} + \frac{2}{x^3} - \frac{3}{x^4} + \frac{4}{x^5}$$

3. Exercises on Trigorgon:

۳- تمرین علی تریغورغون:

$$\frac{d}{dx} \sin x = \cos x$$

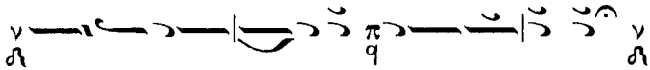
M.2

$$(72) \frac{d}{dx} \left(\sin x + \cos x + \tan x + \cot x + \sec x + \csc x \right) = \cos x - \sin x + \sec^2 x - \csc^2 x + \sec x \tan x - \csc x \cot x$$

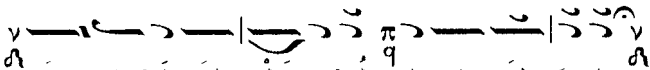
M.2

$$(73) \frac{d}{dx} \left(\frac{1}{\sin x} + \frac{1}{\cos x} + \frac{1}{\tan x} + \frac{1}{\cot x} + \frac{1}{\sec x} + \frac{1}{\csc x} \right) = -\frac{\cos x}{\sin^2 x} + \frac{\sin x}{\cos^2 x} - \frac{1}{\tan^2 x} + \frac{1}{\cot^2 x} - \frac{\tan x}{\sec^2 x} + \frac{\cot x}{\csc^2 x}$$

M.4

(93.A) 
 Και δε ο με θα α σου ο Θε ος η μων

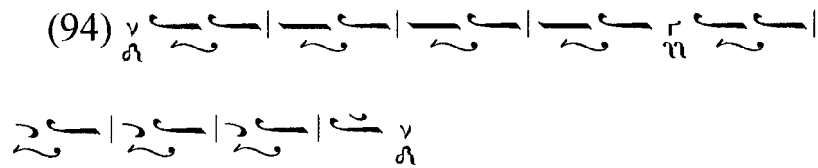
M.4

(93.B) 
 ن ا ه ل ا ي ا ل ب ا ن ط ك ل ي ا و

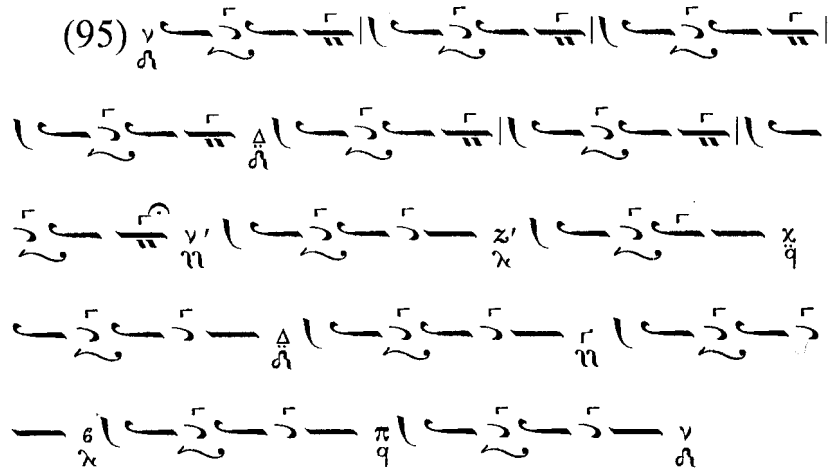
4. Exercises on Sindesmos:

٤ - قمارين على سيندسموس:


M.2

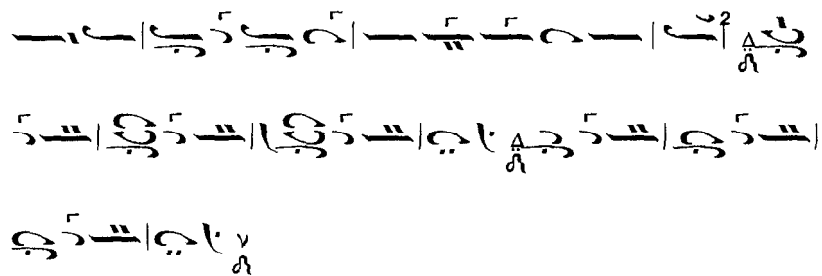
(94) 

M.2

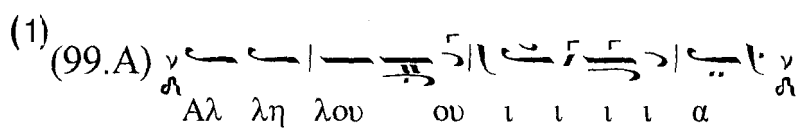
(95) 

M.4

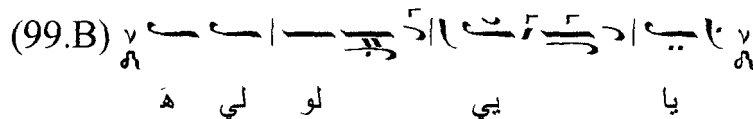
(96.A) 
 Η η τω η δο ξα Κυ υ ρι ι



M.4

(1) (99.A) 
 Αλ λη λου ου ι ι ι ι α

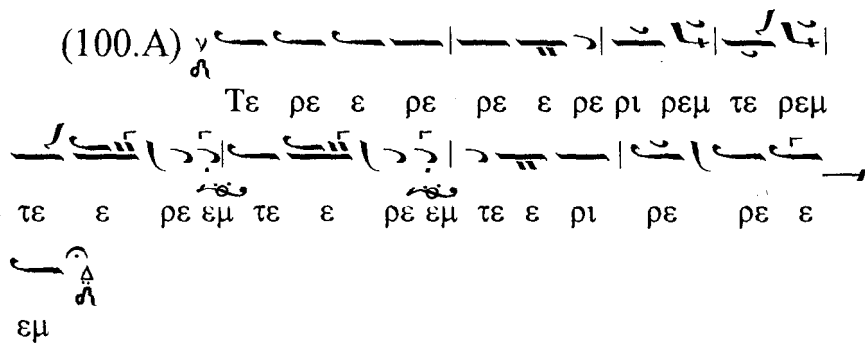
M.4

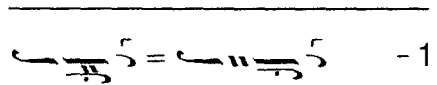
(99.B) 
 يا بي لو لي هـ

6. Exercises on Andofonen:

٦- تمرين على اندوفونن: 

M.4

(100.A) 
 Τε ρε ε ρε ρε ε ρε ρι ρεμ τε ρεμ
 τε ε ρε εμ τε ε ρε εμ τε ε ρι ρε ρε ε
 εμ

 -1

ملحق
APPENDIX
 THE BYZANTINE SCALE INTERVALS

جداول
CHARTS

Tone 3
 اللحن الثالث

Γα ρ
8
10
12
12
8
10
12

ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'

Tone 3
 اللحن الثالث

Γα
12
6
12
12
6
12
12

ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'

Tone 2
 اللحن الثاني

Δι
8
14
8
12
8
14
8

ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'

Tone 1
 اللحن الأول

Πα
12
8
10
12
12
8
10

ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'
 ϛ' ϛ'

φ
 ϛ'

φ
 ϛ'

φ

φ
 ϛ'

Tone 5
اللحن الخامس

$\pi\alpha$
 $Z\omega$

12
12
6
12
12
8
10

$\pi' q$
 $y' n$
 $z' \lambda$
 $x' q$
 Δd
 $r' n$
 $\epsilon \lambda$
 $\pi' q$

Tone 5
اللحن الخامس

$K\epsilon$

12
8
10
12
8
12
10
8
10

$\pi' q$
 $y' n$
 $z' \lambda$
 $x' q$
 Δd
 $r' n$
 $\epsilon \lambda$
 $\pi' q$

Tone 5
اللحن الخامس

$\pi\alpha$

12
8
10
12
12
8
10

$\pi' q$
 $y' n$
 $z' \lambda$
 $x' q$
 Δd
 $r' n$
 $\epsilon \lambda$
 $\pi' q$

Tone 4
اللحن الرابع

12
8
10
12
12
8
10

$\pi' q$
 $y' n$
 $z' \lambda$
 $x' q$
 Δd
 $r' n$
 $\epsilon \lambda$
 $\pi' q$

Tone 7
اللحن السابع
 $Z\omega$

نياتونيكى

10
12
12
8
10
12
8

z' λ x q Δ δ r n ϵ λ π q ν δ z
 μ ϕ μ ϕ μ ϕ μ

Tone 7
اللحن السابع
 $Z\omega$

6
12
12
12
6
12
12

x' n x q Δ δ r n ϵ λ π q ν δ z
 μ ϕ μ ϕ μ ϕ μ

Tone 7
اللحن السابع
 $\Gamma\alpha$

12
6
12
12
6
12
12

y' δ z' n x q Δ δ r n ϵ q π δ ν n
 μ μ μ μ μ μ μ

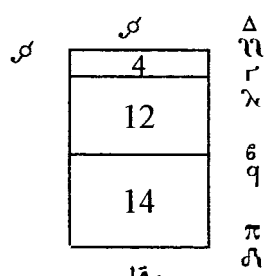
Tone 6
اللحن السادس
 $\pi\alpha$

4
20
6
12
4
20
6

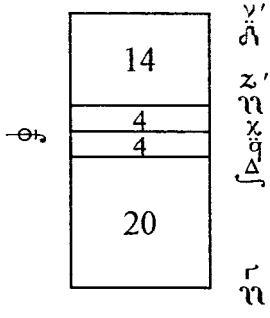
π δ z' n x q Δ δ r n ϵ q π δ ν n
 μ μ μ μ μ μ μ

Νισαμπούρ
NISHAMPOUR SCALE

مقام نیشامپور

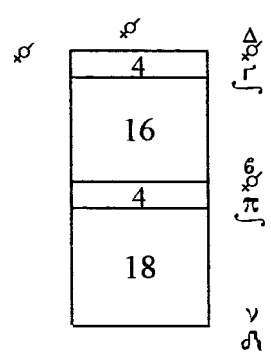


مقام
χισάρ
حصار
HISAR SCALE

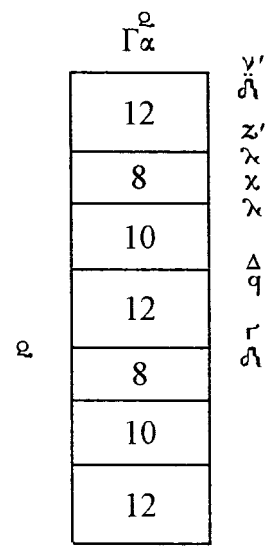


Μουσταάρ
MOUSTAAR SCALE

مقام مستعار



Tone 8
اللحن الثامن



Tone 8
اللحن الثامن

