

K cW\ Y`]a `l bghfi h! < U]b]W\! ? fY]g. `l bZÀ``Yž
: YghY`i bX`bYi Y`6]YfY

9bhXYW_Yb`G]Y`X]Y`gdUbbYbXghYb`9fY][b]ggY`XYf`K cW\ Y`]a
l bghfi h! < U]b]W\! ? fY]g. `j cb`l bZÀ``Yb`V]g`bYi Yb`6]YfYb`]b
A Ø\` \Ui gYb"

l bghfi h! < U]b]W\! ? fY]g" `b`XYf`j Yf[Ub[YbY`K cW\ Y`[UV`Yg`]a
l bghfi h! < U]b]W\! ? fY]g`a Y`fYfY`VYa Yf`Ybgk YfhY`9fY][b]ggY" `<]Yf
g]bX`X]Y`5i ZFY[Yf`i bX`9bhk]W_`i b[Ybž`X]Y`X]Y`FY[]cb`]b`5hYa
[Y\U`hYb`\UVYb"

B Yi Yg`6]Yf`YfcVYfh`A Ø\` \Ui gYb

`b`A Ø\` \Ui gYb`[]Vh`Yg`; fi bX`ni a` : Y]Yfb`8 Ug`6fUi \Ui g`ni a
@Øk Yb`\Uh`Y]b`bYi Yg`7fUZhV]Yf`bUa Ybg` : ØbZhY`b&) `j cf[YghY`hž
XUg`VY]`XYb`6Ygi W\Yfb`\Yfj cffU[YbX`Ub_ca a h`8]YgYg`Xi b_`Yž
gØZZ[Y`6]Yf`Ài Zh`U_hi Y`hYfk Y]gY`ØVYf`X]Y`NUdZ\À\bY`XYf
6fUi YfY]"8]Y`YfghY`7\Uf[Y`k Uf`gc`YfZc`[fY]W\ž`XUgg`VYfY]hg
k Y]hYfY" \$\$\$\$@]hYf`bUW\ [YVfUi h`k i fXYb"8 Ug`6YgcbXYfY`Ub
X]YgYa`6fÀi`]gh`X]Y`Ui g[Yk c[YbY`A U`nbchY`i bX`X]Y`h]YZ[fØbX][Y
: UfVYž`X]Y`Yg`ni`Y]bYa`k U\`fYb`; Ybi gg`a UW`h"6Ygi W\Yf
VYf]W`hYb`j cb`Y]bYa`fi bXYb`; YgW`a UW_`i bX`Y]bYf`XYi h]W`Yb
5fca U]bhYbg]hÀhž`X]Y`XUg`6]Yf`ni`Y]bYa`A i gg`ZØf`@]YV\UVYf
a UW`h"

8]Y`9]bZØ\fi b[`X]YgYg`bYi Yb`6]YfYg`nY][hž`k]Y`YVYbX][`X]Y
6]Yf_`i`hi`f`]b`XYf`FY[]cb`]gh`9g`n]Y\`h`gck c`\`9]b`Y]a]gW`Y`U`g
Ui W`Hci f]ghYb`Ubž`X]Y`XUg`\UbXk Yf_]W\`[YVfUi hY`6]Yf`Yf`YVYb
a ØW`hYb"8 Ug`Yb`hghY`h`Y]bY`gdUbbYbXY`8 mbUa]_ž`X]Y`Ui W`bUW
Ui » Yb`X]Y`5h`fU_h]j]hÀh`A Ø\` \Ui gYbg`ghY][Yfh"

GWX cW_]YfYbXYf'I bZU``']b'6UX'@Ub[YbgU`nU

9]b'hfU[]gWXYf'J cfZU``YfY][bYhY'g]Wx']b'XYf'B UWxh'j cb'8]YbghU[
ni 'A]hkh cWx'Ub'XYf'9i fcdU_fYi ni b[]b'6UX'@Ub[YbgU`nU''9]b
↑ b[Yf': U\ fUbZAb[Yf'j Yf'cf'X]Y'?cbhfc``Y'ØVYf'gY]b'5i hcž'k Ug'ni
Y]bYa'gdY_hU_i'ÀfYb'I bZU``ZØ\fhY''NYi [Yb'VYf]WxhYhYb'j cb
ei]YhgWXYbXYb'F Y]Zyb'i bX'Y]bYa'Ui hYb'?bU``'CV'X]Y'I a ghAbXY
XYg'I bZU``g'a Ø[]WXYfk Y]gY'Ui Z'Y]bY'f]g_UbhY': U\fk Y]gY'cXYf
UbXYfY': U_hcfYb'ni fØW_ni ZØ\fyb'g]bXž'V'Y]Vh'bcWx'i b[Yk]ggž'i bX
X]Y'Dc']nY]'Uh'X]Y'9fa]h'i b[Yb'Ui Z[Ybca a Yb''Gc'WXY'I bZÅ''Y
k YfZYb'Y]b'@Wx'h'Ui Z'X]Y'; YZU\fybž'X]Y'↑ b[Y': U\fyf'cZh
i bhYfgWx'ÀhnYbž'i bX'X]Y'bchk Yb][Y'J cfg]Wx'hž'X]Y'Ui Z'XYb'GhfU» Yb
[YVchYb']gh"

8 Yf'J cfZU``\ Uh'VY]'XYb'5bk c\ bYfb'6Ygcf[b]g'Ui g[Y'Øgh''Gc'WXY
XfUa Uh]gWXYb'9fY][b]ggY'_ØbbYb'b]Wx'h'bi f'XUg']bX]j]Xi Y''Y'@YVYb
VYY]bhfÅWxh][Ybž'gcbXYfb'Ui Wx'XUg'G]WXYf\Y]hg[YZØ\'']b'XYf
; Ya Y]bgWxUZh'VYY]bZi ggYb''; YfUXY']b'K c\ b[YV]YhYbž'k c
J Yf_Y\ f'i bX'@YVYb'Yb['VY]Y]bUbXYf'Y[Ybž']gh'X]Yg'j cb' [fc» Yf
6YXYi hi b["

8 Ug'GhUXhZYgh'ni 'DZ]b[ghYb. 'B Yi Yf
5i gf]WxhYf'Vf]b[h'Zf]gWXYb'K]bX

8]Y'J cfVYfY]hi b[Yb':ZØf'XUg'hfUX]h]cbY''Y'GhUXhZYgh'ni 'DZ]b[ghYb']b
A Ø\` \Ui gYb'ghY\Yb'Ubž'i bX'Yg'[]Vh'J YfÅbXYfi b[Yb']a
cf[Ub]gUhc f]gWXYb'HYUa ''9]b'bYi Yf'5i gf]WxhYf'k i fXY'[YZ' bXYb.
Nk Y]'A Ø\` \Ài gYf'\UVYb'X]Y'J YfUbhk c fhi b['ZØf'X]Y'8i fWxZØ\ fi b[
XYg': YghYg'ØVYfbca a Yb''8]YgY'J YfÅbXYfi b['_ØbbhY'Zf]gWXYb
K]bX']b'X]Y'J YfUbghU'hi b['Vf]b[Yb'i bX'bYi Y'≠YYb'ni f': ØfXYfi b[
XYg'GhUXhZYghYg'Y]bVf]b[Ybž'XUg'A YbgWXYb'Ui g'XYa' [YgUa hYb
l bghfi h! < U]b]Wx! ? fY]g'Ubn]Y\h"

8 Ug'GhUXhZYgh']gh'b]Wx'h'bi f'Y]b'gcn]U'Yg'<][\'] [\hž'gcbXYfb'Ui Wx
Y]bY'D'UhhZcfa'ni f'8UfghY''i b['XYf''c_U'Yb'?i 'hi fž'?i bghi bX
; Ughfcbca]Y''9g'V'Y]Vh'UVni k UfhYbž'k Y'WXY'bYi Yb'9Ya YbhY'X]Y
GdUn]Yf[Àb[Yf'i bX'6Ygi WXYf']b'X]YgYa' ð\ f'Yfk UfhYb'_ØbbYb"

A Ø\ \Ui gYb `]b `XYf `Df]a Y `H]a Y

⊕ `X]YgYf`K cWXY`k Uf`A Ø\ \Ui gYb `Ui W `]b `XYb `A YX]Yb `dfÅgYbħž
U`g`XUg`6fUhk i fgha i gYi a `]b `XYf`GYbXi b[` HJ `hchU` `ZØf`nY\ b
A]bi hYb `ni f`VYghYb `GYbXYnY]hj cf[YghY`h`k i fXY" `A cXYfUhc`f
GYVUgh]Ub `Di ZdUZZ`VfUW`hY `a]h`gY]bYa `6fUhk i fgh!@YX`X]Y `GhUXh
i bX`]\f`_i `]bUf]gWXYg`9fVY`]bg`F Ua dYb`]W`h" `Gc`WXY`5i Zhf]hhY
_ØbbYb`X]Y`6Y`_Ubbh\Y]h`XYf`F Y[]cb`ghY][Yfb`i bX`a Ø[`]WXYfk Y]gY
X]Y`h`ci f]gh]gWXY`5bn]Y\i b[g`fUZh`Yf\Ø\Ybž]bXYa `g]Y`X]Y
6YgcbXYf\Y]hYb`j cb`H\Øf]b[Yb`i bhYfghfY]WXYb"

8]Y` : fU[Y`V`Y]Vhž`cV`X]YgY`A YX]YbdfÅgYbn`d`cg]hj Y`K YfVi b[`cXYf
Y]bYb`_f]h]gWXYb`6`]W`_Ui ZX]Y`GdYn]U`]hÅh`XUfghY`h" ⊕ `YXYa ` : U`
V]YhYh`g]Y`X]Y` ; Y`Y[Yb\Y]hž`X]Y`F Y[]cb`]bg` ; YgdfÅW`ni `Vf]b[Yb
i bX`a Y`f`A YbgWXYb`Ui ZXUg`_i `hi fY`Y`5b[YVch`A Ø\ \Ui gYbg
Ui Za Yf_gUa `ni `a UWXYb"

< c ZZbi b[`ZØf`XYb `A Ø\ \Åi gYf`@Øk Yb

⊕ `A Ø\ \Ui gYb `[]Vh`Yg`Ui W ` : fU[Yb`fi bX`i a `X]Y` ; YghU`hi b[
ØZZYb`h]WXYf` : `ÅWXYb" `8]Y` : fY]ZÅWXY`Ua `A Ø\ \Åi gYf`@Øk Yb`g]Y\h
a Ø[`]WXYfk Y]gY`VU`X`Y]bY`5i Zk Yfhi b[" `8 Ug`D`UhYUi `ØVYf`XYf
GhUXh`k UfhYh`XUfUi Zž`XUgg`a Y`f`5i Za Yf_gUa `_Y]h`Ui Z`gY]bY
9b`hk]W`_i b[`[Yf]W`hYh`k]fX" `⊕]h]Uh]j Yb`i bX` : XYYb`ni f
J YfVYggYfi b[`XYg`5fYU`g`_ØbbhYb`XYb`6Yk c`bYfb`bYi Y
A Ø[`]WXY`_Y]hYb`ZØf`9f\c`i b[`i bX` : fY]nY]h`V]YhYbž`i bX`Yg`V`Y]Vh
gdUbbYbXž`k Y`WXY`_cb`_fYhYb`D`ÅbY`]b`bU\Yf`Ni `_i bZh`j cf[YghY`h
k YfXYb"

8]Y`9b`hk]W`_i b[Yb`XYf`j Yf[Ub[YbYb`K cWXY`]a `l bghfi h! < U]b]W`!
?fY]g`nY][Ybž`XUgg`X]Y`F Y[]cb`gck c`\`]b`_i `hi fY`Yb`U`g`Ui W `]b
U`hÅ[`]WXYb`5gdY`_hYb`j]Y`ni `V]YhYb`\Uh" `6`Y]VYb`G]Y` [YgdUbbh
Ui ZX]Y`_ca`a YbXYb`BYi][_Y]hYb`i bX`J YfÅbXYfi b[Yb`

<]bhYf[fi bX`ni f`J Yf`_Y`f`gg]WXYf\Y]h`]a

l bghfi h! < U]b]W`! ? fY]g

J Yf_Y\ fgi bZ`Y'g]bX'ja' l bghfi hl < U]b]W! ? fY]gž'k]Y']b'j]Y`Yb
`AbX`]WYb`F Y[]cbYb`H\ Øf]b[Ybgž'Y]b`YfbghYg`H\Ya U""8]YgY
; Y[YbX']gh[Y_YbbnY]WbYh`Xi fW`Yb[Y`GhfU» Yb`i bX`Y]bY`c\Y
5bnU`U`Ub': U\ fUbZ`Ab[Yfb" GhUh]gh]_Yb`XYg`H\ Øf]b[Yf`A]b]ghYf]i a g
ZØf` ð ZfUghfi _hi f`i bX`@UbXk]fhgW UZh`nY][Ybž`XUgg`Yg`]b`XYb
`YhnhYb` ð\ fYb`ni `Y]bYa `Y]W`hYb`5bgh]Y[`XYf`J Yf_Y\ fgi bZ`Y`Y
[Y_ca a Yb`]gh" 8]Yg`j YfXYi h`]W`h`X]Y`B`chk YbX][_Y]h`j cb
dfÄj Ybh]j Yb`A U» bU`a Yb`ni f`J YfVYggYfi b[`XYf
J Yf_Y\ fgg]W`Yf\Y]h"

9]b`k Y]hYfYf': U_hcf`]gh`X]Y`J Yf_Y\ fgYfn]Y\i b["K Ä\ fYbX`j]Y`Y
GW`i `Yb`]b`XYb` `AbX`]WYb`F Y[]cbYb`Y]b`6Yk`i gghgY]b`ZØf
G]W`Yf\Y]h`ja` GhfU» Ybj Yf_Y\ f`ZØfXYfbž`nY][h`Y]bY`l bhYfgi W`i b[
XYg`5857ž`XUgg`↑ b[Y': U\ fYf`cZh`i bni fY]W`YbX`Ui Z
f]g]_ca]bXYfbXYg`J Yf\ U`hYb`j cfVYfY]hYh`g]bX""8]Y`?ca V]bUh]cb
Ui g`l bYfZU\ fYb\Y]h`i bX`ZY\ `YbXYf`GW`i `i b[`_Ubb`ni
[YZ`Ä`f`]W`Yb`G]h`i Uh]cbYb`ZØ\ fYbž`k]Y`XYa` _Øfn`]W`VYgW`f]YVYbYb
l bZU`]b`6UX`@Ub[YbgU`nU"

B Yi Yg`j cb`A Ø\` \ Ui gYb.

GhUXhYb`hk]W`_i b[gdfc`Y`_hY

8]Y'; fØbZ`ÄW`Y`Ua` @Øk Yb`]b`A Ø\` \ Ui gYb`]gh`HY]`Y]bYg`[fØ» YfYb
GhUXhYb`hk]W`_i b[gdfc`Y`_hYgž`XUg`Ui Z`X]Y`K]YXYfVY`YVi b[`i bX
J YfgW`ØbYfi b[`ÖZZYbh`]W`Yf`F`Äi a Y`UVn]Y`h" <]YfVY]`gd]Y`h`X]Y
6Øf[YfVYhY]]i b[`Y]bY`nYbhfU`Y`F`c`Y""5_hi Y`Y`l a ZfU[Yb`nY][Ybž
XUgg`5bk c\ bYf`U_h]j `Ub`XYf'; YghU`hi b[`i bX`B`i hni b[`XYg`D`UhnYg
]bhYfYgg]Yfh`g]bX""8]Yg`_ØbbhY`ni `Y]bYf`k Y]hYfYb`5i Zk Yfhi b[`XYf
l a [YVi b[`ZØ\ fYb`i bX`X]Y`@YVYbgei U`]hÄ`h`XYf`6Yk c\ bYf
ghY][Yfb"

8 UfØVYf`\]bUi g`[]Vh`Yg` ð]h]Uh]j Yb`ni f`GW`UZZi b[`j cb
bUW` \ U`h][Yb': fY]nY]ha Ö[`]W`_Y]hYb`Ui Z`XYb`6fUW`Yb`]b`XYf`GhUX`h"
9g`ghUhhZ]bXYb`VYfY]hg'; Ygd fÄW`Y`nk]gW`Yb`XYf`GhUX`hj Yfk U`hi b[
i bX`j YfgW`]YXYbYb` ðhYfYggYb[fi ddYbž`i a `?cbnYdhY`ni
Yb`hk]W`_Y`bž`X]Y`gck c\`X]Y`B`Uhi f`U`g`Ui W`X]Y`gc`n]U`Y` ðhYfU_h]cb
ZØfXYfb""8]YgY`A U» bU`a Yb`_ØbbhYb`XUg`GhUX`hV]`X`dcg]h]j
j YfÄbXYfb`i bX`Y]b`5bfY]n`ZØf`Hci f]ghYb`gY]bž`A Ø\` \ Ui gYb`ni

VYgi WYb"

GhUh]gh]_Yb`ni f`6]YfdfcXi _h]cb`]b`H\Øf]b[Yb

H\Øf]b[Yb`]gh`Y]bY`FY[]cbž`X]Y`ZØf`]\fY`6fUi _i bgh`VY_Ubbh`]gh"
@Ui h`XYa`H\Øf]b[Yf`@UbXYgUa h`ZØf`GhUh]gh]_`]gh`X]Y`NU\`XYf
`Y]bYbž`\UbXk Yf]WXYb`6fUi YfY]Yb`]b`XYb`YhnhYb`]\fYb
g][b]Z_Ubh`[Ygh]Y[Yb`"a`]\f`&\$&&k UfYb`Yg`ØVYf`%\$\$
6fUi YfY]Ybž`k Ug`Y]bYb`5bgh]Y[]cb`ØVYf`&\$`i`]a`JYf[`Y]WXYni
&\$%)`VYXYi h`h"8]Y`ni bY\`a`YbXY`BUW`ZFU[Y`bUW`7fUZh`6]YfYbž
k]Y`XYa`bYi`Yb` : ØbZnY\b&) ž`gd]Y[Y`b`HfYbXg`k]XYfž`X]Y`]b
[Ubni`8Yi hgW`UbX`ni`VYcVUW`hYb`g]bX"

8]Y`6Y`]YVh\Y]h`X]YgYf`6]YfY`nY][h`b]W`h`bi`f`XUg`k UW`gYbXY
`hYfYggY`XYf`?cbgi`a`YbhYb`Ub`fY[]cbU`Yb`DfcXi`_hYbž`gcbXYfb
Ui`W`XUg`DchYbn]U`ZØf`Y]bYb`bUW`\U`h][Yb`Hci`f]ga`i`ggY`_hcfž`XYf
Ui`Z`X]Y`6fUi`_i`h`i`f`Zc`_i`gg]Yfh`]gh`Ni`XYa`VYf]W`hYh`XUg`H\Øf]b[Yf
A`b]ghYf]i`a`ZØf`K`]fhgW`UZh`XUgg`XYf`I`a`gUhn`]a`6]YfgY`_hcf`]b`XYf
FY[]cb`_cbh]bi`]Yf`]W`k`ÅW`ghž`k`Ug`Y]b`dcg]hj`Yg`NY]WXYb`ZØf`X]Y
\Y]a`]gW`Y`K`]fhgW`UZh`XUfghY`h"

8YhU]`g

6Ygi WXYb`G]Y`i`bg`Ui`Z`b!U["XY