

HYi ZY`']a `8YhU]'`XYf'[Yd`UbhYb`? fmdhc! F Y[Y`b

⊕`Y]bYa `VY[fØ» Ybgk YfhYb`GWf]h`UVYb`X]Y`Vf]h]gWYb
6Y\ÖfXYb`Ub[`Yfk UfhYhY`9bhgWY]Xi b[Yb'[YhfcZZYbž`i a`X]Y
: ÖfXYfi b[`j cb`? fmdhc!5ggYhg`i bhYf`XUg`8UW`XYf
:]bUbnX]Ybgh`Y]ghi b[gfY[i`]Yfi b[`ni`Vf]b[Yb"5VYf`XYf
HYi ZY`k]fX`]a `8YhU]'`ghYW_Yb"8]Y`FY[]Yfi b[`i bX`X]Y
5i Zg]W`hgVY\ÖfXYž`X]Y:]bUbW]U`7cbXi W`5i h\cf]hm`fl 75łž`
a ØggYb`_i [`UbXY`bž`i a`X]Y`Bchk YbX][`_Y]h`XYg
5b`Y[YfgW`i hnYg`a]h`XYa`k]W`h][Yb`N]Y`ž`X]Y`9bhk]W`_i b[
X]YgYf`Ybcfa Yb:]bUbn]bbcj Uh]cb`ni`ZÖfXYfbž`]b`9]b`_Ub[`ni
Vf]b[Yb"5b[Yg]W`hg`XYf`Ybcfa Yb`5i gk Y]hi b[`j cb`? fmdhc!
⊕j Ygh]h]cbYbž`b]W`h`ni`Y`hnh`VY]'Df]j UhUb`Y[Yfbž`XUfi bhYf`
j]Y`Y`i bYfZU`fYbY`A YbgW`Ybž`X]Y`ni a`YfghYb`A U`
]bj Ygh]YfYbž`_ca a`h`X]Y`cZZ]n]Y`Y`5_h]cb`ni f`fYW`hYb`NY]h`
8]Y`Øb[ghYb`Hi fVi`YbnYb`Ui ZXYb:]bUbna`Áf`_hYbž`
Y]bgW`]Y»`]W`gW`UfZYf`? cffY`_hi fYb`VY]`/ Ua d^Y`]d/

⊕`Y]bYa `VY[fØ» Ybgk YfhYb`GWf]h`UVYb`X]Y`Vf]h]gWYb
6Y\ÖfXYb`Ub[`Yfk UfhYhY`9bhgWY]Xi b[Yb'[YhfcZZYbž`i a`X]Y
: ÖfXYfi b[`j cb`? fmdhc!5ggYhg`i bhYf`XUg`8UW`XYf
:]bUbnX]Ybgh`Y]ghi b[gfY[i`]Yfi b[`ni`Vf]b[Yb"

5VYf`XYf`HYi ZY`k]fX`]a `8YhU]'`ghYW_Yb"8]Y`FY[]Yfi b[`i bX`X]Y
5i Zg]W`hgVY\ÖfXYž`X]Y:]bUbW]U`7cbXi W`5i h\cf]hm`fl 75łž`a ØggYb
_i [`UbXY`bž`i a`X]Y`Bchk YbX][`_Y]h`XYg`5b`Y[YfgW`i hnYg`a]h
XYa`k]W`h][Yb`N]Y`ž`X]Y`9bhk]W`_i b[`X]YgYf`Ybcfa Yb
:]bUbn]bbcj Uh]cb`ni`ZÖfXYfbž`]b`9]b`_Ub[`ni`Vf]b[Yb"

5b[Yg]W`hg`XYf`Ybcfa Yb`5i gk Y]hi b[`j cb`? fmdhc!⊕j Ygh]h]cbYbž`
b]W`h`ni`Y`hnh`VY]'Df]j UhUb`Y[Yfbž`XUfi bhYf`j]Y`Y`i bYfZU`fYbY`
A YbgW`Ybž`X]Y`ni a`YfghYb`A U`]bj Ygh]YfYbž`_ca a`h`X]Y`cZZ]n]Y`Y`

5_h]cb`ni f`fYWX hYb`NY]h"

8]Y`Øb[ghYb`Hi fVi`YbnYb`Ui ZXYb`:]bUbna`Àf_hYbž`Y]bgWX`]Y»`]WX
gWX UfZYf`? cffY_hi`fYb`VY]`? fmdhc!5ggYhgž`j YfXYi`h]WX Yb`X]Y
F]g]_Yb`gc`WX Yf`÷j Ygh]h]cbYb`i bX`XUa`]h`X]Y`B`c`k`Yb`X][`_]h`Y]b`Yf
[i`hYb`FY[i`]Yfi`b["

8 Ug`:]bUbna`]b]ghYf]i`a`U`h`b`UWX`Y]b`Yf`ÒZZY`bh]WX`Yb`?`c`bgi`h`U]h]cb
]a`j`Yf[`Ub[`Yb`Yb`÷\`f`Ub[`Y`_`Ø`b`X][`hž`X`U`gg`Y`g`V`Y`f`Y]h]ghž`X`Y`a
DUf`Ua`Y`bh`J`c`fg`WX`À[`Y`ni`f`J`Y`fg`WX`À`f`Zi`b[`X`Y`f`F`Y[i`]`Y`fi`b[`j`cb
J`Y`fa`Ò[`Y`b`gk`Y`fh`Y`b`a`]h`\`Ò\`Y`f`Y`a`F]g]_c`ž`Y]bgWX`]Y»`]WX`?`f`md`hc`ž
j`c`f`ni`Y[`Y`b"

÷`Y]b`Ya`_`c`c`f`X]b]Y`fh`Y`b`5`bg`U`h`j`Y`f`Ò`Z`Z`Y`bh]WX`h`Y`X]Y`:]`7`5`Y]b`Y
?`c`bgi`h`U]h]cb]a`5`bg`WX`i`gg`U`b`X`U`g`Y`h`h`h`À`\`f][`Y`8]g`_i`gg]c`b`gd`Ud]Y`f
a`h`X`Y`a`H]h`Y`G`h`À`f`_i`b[`i`b`g`Y`f`Y`f`:]b`U`b`n`Z`Ø`f`X`Y`fi`b[`g`f`Y[`Y`b`Z`Ø`f
f]g]_c`f`Y]WX`Y`÷j Ygh]h]cbYb`i bX`i`b`h`Y`f`b`Y`a`Y`b`ž`X]Y
:]b`U`b`n`Z`Ø`f`X`Y`fi`b[`Y`b`i`Y`b`Y`a`][`Y`b`"

8]Y`j`c`f[`Y`g`WX`U[`Y`b`Y`5`i`Z`g]WX`h`n]Y`h`X`U`f`U`i`Z`U`V`ž`U`Y`K`Y`f`Vi`b[`Z`Ø`f
?`f`md`hc!5ggYhg`i`b`X`U`b`X`Y`f`Y`K`Y`f`V`Y`U`_h]cb`Y`b`i`b`h`Y`f`X`Y`b`:]b`U`b`W]U`
G`Y`f`j]WX`g`U`b`X`A`U`f`_`Y`hg`5`W`h`&`\$`\$`\$`ni`V`f]b[`Y`b``8]Y`g`k`Ø`f`X`Y`Z`Ø`f
?`f`md`hc`]b[`Y]WX`Y`f`K`Y]g`Y[`Y`h`Y`b`ž`k`]Y`Y]b`f`Y[i`]Y`fh`Y`g
:]b`U`b`n`X]Y`b`g`h`Y]g`h`i`b[`g`i`b`h`Y`f`b`Y`a`Y`b`K`Y`f`Vi`b[`Z`Ø`f`:]b`U`b`n`d`f`c`X`i`_`h`Y
[`Y`b`Y`a`][`Y`b`a`i`gg"

A`j`h`Y]i`b[`Y`b`U`b`?`i`b`X`Y`b`i`b`X`d`c`h`Y`b`n]Y`Y`?`i`b`X`Y`b`a`Ø`gg`Y`b`X`Y`b
:]`7`5`J`c`f`g`WX`f]Z`h`Y`b`Y`b`h`g`d`f`Y`WX`Y`b.`÷`g`V`Y`g`c`b`X`Y`f`Y`a`Ø`gg`Y`b`g]Y`Z]f`ž
_`U`f`i`b`X`b]WX`h]f`f`Y`Z`Ø`f`Y`b`X`g`Y]b``8`U`f`Ø`V`Y`f`\]b`U`i`g`j`Y`f`g`i`WX`h`X]Y`:]`7`5
ni`_`À`f`Y`b`ž`k`Y`WX`Y`5`b`U[`Y`b`g]Y`U`g`f]g]_c`f`Y]WX`Y`f`Y`f`U`WX`h`Y`h`i`b`X`Z`Ø`f
k`Y`WX`Y`5`f`h`j`c`b`5`b`Y[`Y`f"

8`Y`f`j`c`f[`Y`g`WX`U[`Y`b`Y`5`bg`U`h`_`U`h`Y[`c`f]g]Y`f`h`X`f`Y]`;`fi`d`d`Y`b`j`c`b
J`Y`fa`Ò[`Y`b`gk`Y`fh`Y`b``8]Y``;`fi`d`d`Y`a`]h`X`Y`a`[`Y`f]b[`g`h`Y`b`F]g]_c`g]b`X
`Y]WX`h`f`Y`U`]g]Y`f`V`U`f`Y`K`Y`f`h`d`U`d]Y`f`Y`f`F`F`G`L`ni`a`6`Y]g`d]Y`
V`Ø`f`g`Y`b`b`c`h]Y`f`h`Y`5`_h]Y`b``8]Y`g`Y`_`Ø`b`b`h`Y`b`U`b`Y`X`Y`fa`U`b`b`a`U`g`g`Y`b`U`Z`h
j`Y`fa`U`f`_`h`Y`h`k`Y`f`X`Y`b``

9]b[YgWfÅb_hY`A UggYba Uf_hUb`U[Yb`fF A A ž`k]Y`5_h]Yb`cXYf
5b`Y]\Ybž`X]Y`b]W h`Ub`Y]bYf`6ÖfgY`bch]Yfh]g]bXž`cXYf`Y]bY`DYfY!hc!
DYfY!J YfY]bVUfi b[`k ØfXYb`U`g`Ø\YfYg`F]g]_c`Ub[YgY\Yb``8]YgY
?UhY[cf]Y`_ÖbbhY`i bhYf`VYgh]a a hYb`9]bgWfÅb_i b[Yb
a UggYbj Yfa Uf_hYh`k YfXYb"

8]Y`Xf]hhY`i bX`f]g]_cfY]W ghY`? UhY[cf]Y`g]bX`Bcb!A Ugg`A Uf`Yh
žj Ygha Ybhg`fBA A ž``8]Yg`g]bX`[Ydcc`hY`žj Ygh]h]cbYb`]b`Y]bYb
b]W h`ni [Y`UggYbYb` : cbXg`cXYf`gdY_i `Uh]j Y`j``]ei]XY`K YfhdUd]YfY
k]Y`Y]bY`A]b]!5b`Y]\Y"

K Ufi a `UbXY`h`X]Y`F Y[i `]Yfi b[gVY\ÖfXY`Yhnh3`9fghYbg`fYU[]Yfh
Yg`Ui Z`Y Zh][Y`?f]h]_`Ub`gY]bYa `Ub[YV`]W Yb`J YfgÅi a b]gž`5b`Y[Yf
ni `gWØhnYbž`X]Y`j cb`@cbXcb`7Ud]hU`/ ` :]bUbW`f@7/ : ž
Ui g[Y[YVYbY`A]b]!5b`Y]\Yb`[Y`_Ui Zh`\UVYbž`X]Y
ni gUa a YbVfUW Ybž`bUW XYa `g]Y`?i bXYb[Y`XYf`]b
\cWgdY_i `Uh]j Y`J Yfa Ö[Ybgk YfhY`]bj Ygh]Yfh`\UhYb"

8]Y` : 75`]gh`Ui W`gY`f`VYgcf[h`ØVYf`X]Y`VfY]hY`Ni bU`a Y`j cb
 :]bUbNvYhfi [`i bX`6Yhfi [`]b`XYb`YhnhYb`%, `A cbUhYbž`X]Y
k Å`fYbX`7cj]X!%- `ni [Ybca a Yb`\Uh"

GW`Y]» `]W`\Uh`X]Y`F Y[i `]Yfi b[gVY\ÖfXY`Y]bYb`Yf`YV`]W Yb
5bg]h]Y[`XYf`5_nYdhUb`n`j cb`?fmdhc!5ggYhg`]a `9]bnY`\UbXY`
ZYgh[YghY`h"

8]Y` : 75`gW`À[h`j cfž`?fmdhc!5ggYhg`]b`X]Y`F A A ž? UhY[cf]Y`a]h
a]h`YfYa `F]g]_c`Y]bni cfXbYbž`k Ug`Y]b][Y`9]bgWfÅb_i b[Yb`ZØf
X]Y` : ÖfXYfi b[`j cb`?fmdhc!5ggYh!8]YbghYb`Ui ZYf`Y[Yb`k ØfXY"

8]Y`?fmdhc]bXi ghf]Y`]gh`Yf`Y]W hYfhž`XUgg`Yg`_Y]b`j c``ghÅbX][Yg
K YfVYj YfVch`ZØf`?`Y]bUb`Y[Yf`[]Vhž`k]Y`k]f`Yg`]b`G]b[Udi f
[YgY\Yb`\UVYb``8cW`k]Y`]a a Yf`VY]`bYi Yb`J cfgWf]ZhYb`\Åb[h
j]Y`j ca `8YhU]`UV"

I bhYfbY`a Yb`gc``hYb`[YVYhYb`k YfXYbž`ni `ØVYfd`fØZYbž`cV
dchYbn]Y``Y`?i bXYb`X]Y`Bi UbW`b`nk]gW Yb`XYb
5b[YVchYb`Y]bYf`J]Y`nU`\`j cb`C f[Ub]gUh]cbYb`i bX

8]YbghY]ghi b[Yb'j YfghY\Yb"; fcVY'?cbhfc`Yb'fY]WYb
b]W'h'Ui g

8Yf'9a dZAb[Yf'Y]bYf'?fmdhc!5ggYh!Dfca ch]cb'a i gg'Ybhk YXYf'U`g
nYfh]Z]n]YfhYf'<][\`B Yh'K cfh\`ϕj Yghcf'fk BK ϕž'U`g'nYfh]Z]n]YfhYf
Ubgdfi W'gj c`Yf'ϕj Yghcf'ž'U`g'gY`VghnYfh]Z]n]YfhYf'Ubgdfi W'gj c`Yf
ϕj Yghcf'cXYf'U`g'nYfh]Z]n]YfhYf' Y]b[YgW'fAb_hYf' ϕj Yghcf
Y]b[Yghi Zh'k YfXYb"

K]fX`XYf`VYghY\YbXY`HYgh'j cb
:]bUb'nX]Ybgh'Y]ghi b[gi bhYfbY\`a Ybž'X]Y`B Yi _i bXYb'Ui ZbY\`a Ybž
Ub[Yk YbXYh3`ϕh'Yg`ØVYf\Ui dh'Ub[Ya YggYb3'6Y]gd]Y`gk Y]gY
VYXYi hYh'X]Y`9]bghi Ži b[`U`g`< BK =b]W'hž'XUgg'Y]bY`DYfgcb`XUg
F]g]_c`XYf`J Yfk U\fi b[`X][]hU`Yf`J Yfa Ø[Yb'gk YfhY`j YfghY`h"

I bhYfbY\`a Yb'gc`hYb'[YVYhYb'k YfXYbž'ni `ØVYfd'fØZYbž'cV
dchYbn]Y`Y`?i bXYb`X]Y`Bi UbW'b'nk]gW'Yb`XYb`5b[YVchYb`Y]bYf
J]Y`nU\`j cb`Cf[Ub]gUh]cbYb'i bX`8]Ybgh'Y]ghi b[Yb'j YfghY\Yb"
; fcVY'?cbhfc`Yb'fY]WYb`b]W'h'Ui g"

: ØfXYfbXY`I bhYfbY\`a Yb'gc`hYb'Ui W'j YfdZ]W'hYh'k YfXYbž'X]Y
9fZU\fi b[`XYg'ϕj Yghcf'g]b`Y]bYa `VYgh]a a hYb`6YfY]W'ni
VYfØW_g]W'h][Yb"9]bY`dUi gW'U`Y`FY[Y`ž'X]Y`XYb`Ni [Ub[`ni
< BK ϕ`cXYf`YfZU\`fYbYb'ϕj YghcfYb`Y]bgW'fAb_hž'k ØfXY`b]W'h
Ži b_h]cb]YfYbž'XU`j]Y`Y`Øb[YfY`A YbgW'Ybž'X]Y`Ub`?fmdhc
]bhYfYgg]Yfh'g]bXž'g]W'b]W'hie'U`]Z]n]YfYb'k ØfXYbž'gY`Vgh'k Ybb`g]Y
j]Y`ØVYf'?fmdhc`k]ggYb"6]Y`_ØbbhYb`XUbb'[Ynk i b[Yb`gY]bž
6ØfgYb`ni `bi hnYbž'X]Y`b]W'h]a `J YfY]b][hYb`?Øb][fY]W'Ub'gÅgg][
cXYf`fY[i `]Yfh'g]bX"

8]Y`j cf[YgW`U[YbYb`5bZcfXYfi b[Yb`k YfZYbž'ZU`g`g]Y
Ub[Ybca a Yb`k YfXYbž'Yfbgh\UZhY': fU[Yb`ZØf`X]Y`ϕXi ghf]Y`Ui Z'
9]b`_f]h]gW'Yf`Di b_h]gh'X]Y`8YZ]b]h]cbž'k Yf'[YbUi `U`g

_ca dYhYbhY'Ui hcf]g]YfhY':]fa U '[]hž'X]Y'a]h'XYf'; YbY\ a][i b[j cb'6YZ0fXYfi b[Yb'VYUi ZhfU[h]gh"

K ÅfY'ni a '6Y]gd]Y''Y]b'fY[i '']YfhYf'J YfhfYhYf'a]h'9fZU\ fi b['a]h hfUX]h]cbY''Yb':]bUbndfca ch]cbYb' 'gU[Yb'k]f'Z0f'?fYX]h_UfhYb' a]h'?fmdhc!5ggYhg'j YfhfUi h[Ybi [ži a 'X]Y'5fVY]h'ni 'Yf'YX][Yb3

。 VYfgYY!K YfVYU_h]cbYbž'X]Y'g]W\ 'Ub'J YfVfUi W\ Yf'ja 'J YfY]b][hYb ?0b][fY]W\ 'f]W\ hYbž'k 0fXYb'i bhYf'X]Y' [Yd'UbhYb'FY[Y'b'ZU''Ybž gY'Vgh'k Ybb'g]Y'j cb'Ui g'ÅbX]gW\ Yb'J YfUbghU'hYfb'\YfUi g[Y[YVYb k YfXYb''K]Y'YZY_h]j 'X]Yg'j b'XYf'DfUI]g'gY]b'k]fXž'V'Y]Vh UVni k UfhYb"

5'g'8]fY_hcf'XYf'?fmdhc!< UbXY'gcf[Ub]gUh]cb'ja 'J YfY]b][hYb ?0b][fY]W\ '_Ubb'j]W\ 'gU[Ybž'XUgg'X]Y'6fUbW\ Y'ja '5''[Ya Y]bYb Zcfa U'Y'fY[i 'Uhc]gW\ Y'?Uf\Y]h]b'6Yni ['Ui ZK YfVi b['i bX J Yf_Ui ZgZ0fXYfi b['VY[f0» h'' ð'XYb''YhnhYb'A cbUhYb'\Uh'X]Y 5Xj Yfh]g]b['GhUbXUfXg'5i h\cf]hmi8i fW\ gYhni b[ga U» bU\ a Yb [Y[Yb'l bhYfbY\ a Yb'Yf[f]ZZYbž'X]Y'?fmdhc!5ggYhg'i bX'XUa]h j YfVi bXYbY'8]Ybgh'Y]ghi b[Yb'Z0fXYfb"

5VYf'X]Y'6Y[f0bXi b[Yb'Z0f']\fY'9bhgW\ Y]Xi b[Yb'k UfYb'cZij U[Yž k]''_0f']W\ 'i bX'k]XYfgdf0W\ 'W\ ''J]Y'Y'fY[i '']YfhY'l bhYfbY\ a Ybž X]Y'UbXYfY':]bUbNX]Ybgh'Y]ghi b[Yb'YfZc'[fY]W\ 'j Yfa Uf_hYh'\UVYbž a i gghYb'?Ua dU[bYb'ni f0W_n]Y\Yb'i bX'<i bXYfhhUi gYbXY'j cb DZ bX'j Yf']YfYbž'bUW\XYa 'g]Y'A U» bU\ a Yb'ni f'8i fW\ gYhni b['j cb ?fmdhc!5_h]cbYb'Yf[f]ZZYb'\UhYb"

9g'c\ bh'g]W\ 'ni 'VYXYb_Ybž'XUgg'X]Y'Vf]h]gW\ Yb'6Y\ 0fXYb'?fmdhc! 5ggYhg'nk Uf'U'g' ðj Ygh]h]cb'VYhfUW\ hYbž'UVYf'j]Y'Y'hUhgÅW\ 'j]W\ Y i bX'dchYbn]Y''Y'J Yfk YbXi b[gnk YW_Y'\UVYb''6Y]gd]Y'gk Y]gY'\Uh 9'GU'j UXcf'ja 'j Yf[Ub[YbYb'š\ f'6]hW\]b'ni a '[YgYh'W\ Yb NU\ 'i b[ga]hhY''Yf'_Åfh'': 0f'9bhk]W_ 'i b[g'ÅbXYf'_0bbhY'6]hW\]b Y]b'\Yfj cffU[YbXYg'A]hhY''gY]bž'i a '?cffi dh]cb'ni 'fYXi n]YfYb.'8]Y CdYb!Gci fW\!BUhi f'j cb'6]hW\]b!BYhmk Yf_Yb'Yfa 0['j]W\ h'Yg 'YXYa ž'YXY'HfUbgU_h]cb'ni 'j YfZc'[Yb"

BÅ\Yf'Ub'XYf'<Y]a Uh'_0bbhY'?fmdhc'XUni 'VY]hfU[Ybž'XUg

:]bUbnk YgYbžX]Y`J Yfa Ò[YbgV]`Xi b[`i bX`X]Y: Å\][_Y]h`ni f
? Ud]hU`VYgWUZZi b[`ni `XYa c_fUh]g]YfYb"8Yf"? fmdhca Uf_higYb_h
X]Y`9]bhf]hggVUff]YfYb`ZØf`X]Y`6YgWUZZi b[`j cb:]bUbna]hhY`bž
c\`bY`XUgg`Y]b`A U`_Yf`cXYf`Y]b`[fc» Yg`dYfgÒb`]W`Yg`J Yfa Ò[Yb
YfZcfXYf`]W`ig]bX"»XYf`_Ubb`]bj Ygh]YfYbž`XU`Yf`j YfVYggYfb`X]Y
A YbgW`Yb`]\fY`Z]bUbn]Y`Y`6]`Xi b[`i bX`]\f`J Yfgh`AbXb]g`j cb: Y`X"

8]Y`dc`]h]gW`Yb`9bhgW`Y]Xi b[ghfÅ[Yf`a ØggYb`g]W`YfghY`Ybž`XUgg
X]Y`fY[i `Uhc]f]gW`Yb`F U\`a YbVYX]b[i b[Yb`X]Y`Bchk YbX][_Y]h`XYg
5b`Y[YfgW`i hnYg`a]h`XYf: ÒfXYfi b[`bYi Yf`A Ò[`]W`_Y]hYb`]b
9]b`_Ub[`Vf]b[Yb"

K Ybb`X]Y`6Y\`ØfXYb`]\fY`5fVY]h[i h`a UW`Ybž`_ÒbbYb`g]Y`ni`a Y`f
Ni [Ub[`ni :]bUbnX]YbghY]ghi b[Ybž`HfUbgdUfYbn`i bX`ϕ`_i`g]cb
VY]hfU[Yb"

=Ub`HUm`cf`]gh`8]fY`_hcf`j cb`7fmdhcI ?

E i Y`Y.:]bUbW]U`H]a Yg

8YhU]`g

6Ygi W`Yb`G]Y`i bg`Ui Z. `_fmdhc!bYk`g"Uh