

Dc`nY]Y]bgUhn`]b` : i `XU. 'I bZU``a]h
j Yf`YhnhYb`6YUa hYb`i bX`GW cW_ZU\ fYf]b

6Y]`Y]bYa`9]bgUhn`]b` : i `XU`gh]Y» `Y]b`Dc`nY]k U[Yb`a]h
Y]bYa`5i hc`ni gUa a Ybž`k cXi fW`X]Y`6YUa hYb`i bX`X]Y
5i hcZU\ fYf]b`j Yf`Yhnh`k i fXYb"

⊕`Y]bYf`ØVYffUgW`YbXYb`K YbXi b[`U`h`Y]b`I bZU``]b` : i `XUž`XYf
g]W`Ua`8]YbghU[UVYbX`YfY][bYhYž`ni`a Y\ fYfYb`J Yf`Yhni b[Yb
[YZØ\ fhi bX`X]Y`GdUbbi b[Yb`nk]gW`Yb`9]bgUhn`fÄZhYb`i bX
N]j`j Yf`Y\ f`YfbYi h`Ui Z[Yk cfZYb``9]b`Dc`nY]k U[Ybž`XYf`a]h
U_h]j Ya`6`Ui`]W`h`i bX`9]bgUhn`cfb`i bhYfk Y[g`k Ufž`_c``X]YfhY`a]h
Y]bYa`UbXYfYb` : U\fnYi [ž`k Ug`gck c``VY]`XYb`6YUa hYb`U`g`Ui W
VY]`XYf`UbXYfYb` : U\ fYf]b`ZØf`[Ygi bX`Y]h]W`Y` : c`[Yb`gcf[hY"

8]Y`%!`Ä\ f][Y`Dc`n]gh]bž`X]Y`XUg`Dc`nY]ZU\ fnYi [`ghYi YfhYž`gck]Y
]\ f`6Y]ZU\ fYf`Yf`]hYb`VY]`XYa`J cfZU``Y]W`hY`J Yf`Yhni b[Yb`i bX
k i fXYb`ni f`6Y\ UbX`i b[`]b`Y]bY`?`]b`_ [YVfUW`h`8]Y`&+!`Ä\ f][Y
: U\ fYf]b`XYg`UbXYfYb` : U\fnYi [g`[Yf]Yh]b`Y]bYb`GW cW`ni ghUbXž
k Ug`k Y]hYfY`6Ygcf[b]g`ØVYf`]\ fY` ; Ygi bX`Y]h`Ui g`ØghY``Gc`W`Y
I bZÄ`Yž]bgVYgcbXYfY`a]h]bj`c`j]YfhYb`9]bgUhnZU\ fnYi [Ybž
k YfZYb` : fU[Yb`ØVYf`X]Y`G]W`Yf`Y]h`i bX`X]Y`J cf[Y`Yb`gk Y]gY`ja
GhfU» Ybj Yf`Y\ f`Ui Z"

G]W`Yf`Y]hgUgdY`_hY`]a`GhfU» Ybj Yf`Y\ f

8Yf`I bZU``YfY][bYhY`g]W`ž`k Ä\ fYbX`XYf`Dc`nY]k U[Yb`]b`F]W`hi b[
?ØbnY``Z` \ f``6Yf]W`hYb`ni Zc`[Y`b`Ä\ YfhY`g]W`XUg`UbXYfY`5i hc`j`cb
fYW`hg`i bX`\ U`hY`XUg`J cffYW`hž`k Ug`X]Y`8mbUa`_`XYg
Ni gUa a Ybghc» Yg`_ca`d`n]YfhYf`a UW`hY``K Ä\ fYbX` : Yi Yfk Y\ f
i bX`F`Yhni b[gX]YbghfUgW`ni f`GhY``Y`k UfYbž`i a`X]Y`J Yf`YhnhYb`ni
VYfhYi Ybž`Yf`YVh]g]W`X]Y` : fU[Y`K]Y`_ÖbbYb`gc`W`Y`J cfZÄ`Y

ni _ØbZh]['j Yfa]YXYb`k YfXYb3

⊖ j]Y`Yb`GhAXhYb`k]fX`VYfY]hg`]bhYbg]j`ØVYf
G]WYf\Y]hg_Ua`dU[bYb`bUW [YXUW hž`i a`X]Y`K U\fbY\ a`i b['j cb
9]bgUhmZU\fnYi [Yb`ni`Yf\`Ø\Yb"6`Ui`]W`hi`bX`9]bgUhm\cfb`g]bX
YggYbn]Y`ž`i a`gW`bY``9]bgUhmcfhY`ni`YffY]WYbž`UVYf`_ØbbhYb
Yj`Ybhi`Y``UbXYfY`J`Yf`_Y`fghY]`bY\`a`Yf`b]W`h`Ui`gfY]WYbX
gYbg]V]`g]YfYbž`k`Ybb`g]Y`Ub`Y]b`gW`bY`Yg`J`cfUb`_ca`a`Yb
[Yk`Ø\b`h`g]bX"9g`k]fX`Xf]b[YbX`Ya`dZc`\`Ybž`Ui`W`]a` :`U`Y`j`cb
9]bgUhmZU\fnYi [Yb`VYgcbXYfg`Ui`Za`Yf`_gUa`ni`V`Y]VYb`i`bX`XYf
J`cfZU\fh`FYW`bi`b[`ni`hfU[Yb"

8Yf`k`Y]hYfY`J`Yf`Ui`Z`XYg`J`cfZU`g`XYi`hY`h`XUfUi`Z`\]bž`XUgg`VY]XY
: U\fnYi [Y`bUW`X`Ya`Ni`gUa`a`Ybghc»`UV[YgW`Yddh`k`YfXYb
a`i`gghYbž`k`Ug`XYb`a`UhYf]Y`Yb`GW`UXYb`Ui`Z`Yhk`U`%+`\$\$\$`9i`fc
VYn]ZYfh"8]YgY`NU`\`a`U[`Ub`g]W`b]W`h`XfUa`Uh]gW`YfgW`Y]bYbž
YXcW`]gh`YXYf`I`bZU`ž`gdYn]Y`k`Ybb`Dc`]nY]`i`bX`N]j`j]Yf`_Yf
]bj`c`j`Yfh`g]bXž`Y]bY`YfbghY`5b[Y`Y[Yb\`Y]hž`X]Y`b]W`h`bi`f
a`UhYf]Y`Yž`gcbXYfb`Ui`W`Ya`ch]cbU`Y` :`c`[Yb`\`Uh"

- I`bZU`c`fh.` :`i`XU
- NY]hdi`b`_`h.`8]YbghU[bUW`h
- J`Yf`Y`hnhY.`'`%&`Å\`f][Y`Dc`]n]gh]bž`&+!`Å\`f][Y` :`U\`fYf]b
- I`bZU``i`fgUW`Y.`J`cfZU\`fhga`]ggUW`hi`b[`XYf`UbXYfYb
 :`U\`fYf]b

8]Y`HUhgUW`Yž`XUgg`X]Y`'`%&`Å\`f][Y`Dc`]n]gh]b`i`bX`]\`f`6Y]ZU\`fYf
j`Yf`Y`hnh`k`i`fXYbž`gck`j`Y`X]Y`GW`c`W`fYU`_h]cb`XYf`k`Y]hYfYb
5i`hcZU\`fYf]bž`j`YfXYi`h]W`h`X]Y`dchYbn]Y``[YZÅ\`f]W`Yb
G]hi`Uh]cbYbž`]b`XYbYb`g]W`9]bgUhm`fÅZhY`VY]`]\`fYf`5fVY]h
VYZ]bXYb"9g`k]fZi`Ui`W`X]Y`k`]W`h][Y` :`fU[Y`Ui`Zž`k`jY`[i`h
J`Yf`_Y`fghY]`bY\`a`Yf`hUhgÅW`]W`Ui`Z`X]Y`G][bU`Y`j`cb
9]bgUhmZU\fnYi [Yb`fYU[]YfYb`i`bX`cV`X]Y`J`Yf`_Y`fYfn]Y\`i`b[
Yj`Ybhi`Y``Y]bY`5bdUggi`b[`VYb`Øh][h"

8]Y`F`c``Y`XYf`Dc`]nY]`]a`GhfU»`Ybj`Yf`_Y`f`

9]b`k`Y]hYfYf`5gdY`hž`XYf`]b`X]YgYf`G]hi`Uh]cb`j`cb`6YXYi`hi`b[`]ghž

VYn]Y\h'g]W\`Ui Z'X]Y`F c``Y`XYf`Dc`nY]`ja`GhfU»Ybj Yf_Y\`f"8Yf
9]bgUhn`XYf`Dc`nY]`gh`b]W\h`bi`f`X`Uni`j`cf[YgY\Ybž`J`YfVfYW\Yb`ni
j`Yf\]bXYfbž`gcbXYfb`Ui`W\`i`a`VY]`i`bZ`A``Yb`i`bX`B`chg]hi`Uh]cbYb
gW\`bY``ni`Y`Z`b"8`UVY]`gh`Y`g`i`bYf`À`gg`W\`ž`X`Ugg`U``Y
J`Yf_Y\`fghY]`bY\`a`Yf`X]Y`B`chk`YbX][`_`Y]hi`bX`8`f]b[`]W\`_`Y]h`XYf
Dc`nY]Y]bg`À`hY`j`YfghY\Yb`i`bX`fYgdY`_h]YfYb"Bi`f`gc`_`Ubb`XYf
GhfU»Ybj Yf_Y\`f`g]W\YfYf`[`YghU`hYh`k`YfXYb"

≠`5`bVYhfUW\h`XYf`Ø`b[ghYb`9fY][`b]ggY`k`]fX`k`Y]hYf\]b`X]g`_`i`h]Yfhž
k`Y`W\Y`ni`g`À`h`n]W\Yb`A`U»`bU\`a`Yb`YfZcfXYf`]W\`g]bXž`i`a`X]Y
G]W\Yf\Y]h`gck`c`\`VY]`9]bgUhnZU\fhYb`U`g`Ui`W\`ja`U`h`À[`]W\Yb
GhfU»Ybj Yf_Y\`f`ni`[`Yk`À\`f`Y]ghYb"8]Y`9fZU\fi`b[`]Ui`g`i`X`U
_`Ò`bbhY`U`g`5`b`g`hc»`X]YbYbž`]bhYbg]j`bUW\`@`Ò`gi`b[`Yb`ni`gi`W\Ybž
X]Y`U`Yb`J`Yf_Y\`fgZØ\`fYbXYb`ni`[`i`hY`_`ca`a`Yb"

C`V`b`Yi`Y`J`Yf_Y\`fgYfn]Y\`i`b[`gdfc[`fUa`a`Y`c`XYf`j`Yfgh`À`f`_`hY
2`ZY`b`h]W\`_`Y]hgUfVY]h`ni`X`Yb`;`Y`ZU\`fYb`ja`GhfU»Ybj Yf_Y\`fž`X]Y
9fY][`b]ggY`j`Yf`Ub[`Yb`bUW\`Y]bYf`_`f]h]gW\Yb`6YhfUW\hi`b[`]X`Yf
VYghY\YbXYb`fY[`Y`i`b[`Yb"K`Ug`k`]fX`[`YhUbž`i`a`i`c`[`Yj`cfZ`A``Y`ni
a`]b]a`]YfYb`i`bX`X`Ug`6Yk`i`gg`hgY]b`XYf`6Yj`Ò`_`Yfi`b[`]ni`g`W\`À`f`ZY`b`3
8]Yg]gh`Y]bY`:`fU[`Yž`X]Y`i`bg`U``Y`VYhf]Z`h"

J`Yf`Y`hnhY`i`bX`F`Y`hhi`b[`ga`U»`bU\`a`Yb

≠`Zc`[`Y`XYg`i`bZU``g`k`i`fXYb`gck`c`\`X]Y`i`%`!`À\`f][`Y`Dc`n]gh]b`U`g
Ui`W\`]\`f`&-`!`À\`f][`Yf`6Y]ZU\`fYf`a`]h`Y]W\hYb`J`Yf`Y`hni`b[`Yb`]b`Y]bY
?`fUb`_`Yb\`Ui`g`[`YVfUW\h"9g]gh`VY`a`Yf_Y`bgk`Yfhž`X`Ugg`X]Y`VY]XYb
6Y`Ua`hYbž`hf`chn`XYg`G`W\`c`W`gž`XYb`g]Y`Yf`]hhYb`\`UVYbž`g`W\`bY``
a`YX]n]b]g`W\Y`<`]Z`Y`VY`_`Ua`Yb"8]Y`&+`!`À\`f][`Y`5i`hc`ZU\`fYf]bž`X]Y
YVYbZU``g`Ua`i`bZU``VY`hY]`][`h`k`Ufž`Yf`]hh`Y]bY`U`_`i`hY
GhfYggfYU`_h]cbž`X]Y`\`À`i`Z[`]bUW\`hfUi`a`Uh]gW\Yb`9f`YVb]ggYb
Ui`Zh]hž`i`bX`k`i`fXY`YVYbZU``g`ni`f`a`YX]n]b]g`W\Yb`6Y`c`V`U`W\`hi`b[`]b
X]Y`?`]b]_`[`YVfUW\h"

8Yf`F`Y`hhi`b[`gX]Ybgh`k`Uf`dfca`dhj`cf`C`fhž`i`a`X]Y`J`Yf`Y`hnhYb`ni
j`Yfgcf[`Yb"8]Y`g`W\`bY``Y`F`YU`_h]cb`XYf`9]bgUhn`f`À`ZhY`_`Ò`bbhY
Yb`hg`W\Y]XYbX`ZØ`f`X]Y`G`W\`UXYb`gVY[`fYbni`b[`]i`bX`X]Y`J`Yfa`Y]Xi`b[
g`W\`k`YfYfYf`J`Yf`Y`hni`b[`Yb`[`Yk`YgYb`gY]b"≠`gc`W\Yb`G]hi`Uh]cbYb

nY][h'g]W\ 'cZh'X]Y 'K]W\ h][_Y]h'Y]bYg' [i h'_ccfX]b]YfhYb
 F Yhi b [gX]YbghYgž'XYf']b'XYf'@U[Y']ghž']b'GY_i bXYbVfi W\ hY]'Yb
 X]Y'bØh][Yb'A U» bU\ a Yb'ni 'Yf[fY]ZYb"

F YW\ hg`U[Y`i bX`J Yf_Y\ fgg]W\ Yf\ Y]h

⇒ 'XYi hgW\ Yb`J Yf_Y\ fgfYW\ h'g]bX`X]Y`J cfgW\ f]ZhYb`ZØf
 9]bgUhnZU\ fnYi [Y`_'Uf' [YfY[Y`h" Dc`]nY]ZU\ fnYi [Yž'X]Y`a]h
 6`Ui `]W\ h'i bX`G]fYbY`ZU\ fYbž'\ UVYb` [fi bXgÅh`n]W\ `J cffUb [`Ub
 ?fYi ni b [Ybž'a ØggYb`YXcW\ `Ui W\ `XYb`J Yf_Y\ f']a `6`]W\ `UVYb"
 BUW\ `5b [UVYb`j cb`9I dYfhYb`]gh'Yg`YbhgW\ Y]XYbXž'XUgg'gck c\`
 5i hcZU\ fYf`U`g`Ui W\ `9]bgUhn_fÅZhY`X]Y`J Yf_Y\ fgfY [Y`b`VYUW\ hYbž
 i a `gc`W\ Y`I bZÅ``Y`ni `j Yfa Y]XYb``8Yf`J cfZU``]b`i `XU`k]fZh'X]Y
 : fU [Y`bUW\ `XYf`J Yf_Y\ fgg]W\ Yf\ Y]hi bX`XYa` `J Yf\ U`hYb`U`Yf
 J Yf_Y\ fghY`]bY\ a Yf`Ui Zž']bgVYgcbXYfY`]b`ghfYgg][Yb`G]hi Uh]cbYb"

⇒ XYb`YhnhYb`J\ fYb` [UV`Yg`Y]bYb`5bgh]Y [`j cb`J Yf_Y\ fgi bZÅ``Ybž
 X]Y`a]h'9]bgUhnZU\ fnYi [Yb`]b`Ni gUa a Yb\Ub [`ghY\Yb``@Ui h
 GhUh]gh]_Yb`XYg`GhUh]gh]gW\ Yb`6i bXYgUa hYg`g]bX`X]YgY`I bZÅ``Y`cZh
 Ui ZA]ggj YfghÅbXb]ggY`]b`XYf`J cfZU\ fh'ni fØW_ni ZØ\ fYbž`k Ug
 j YfXYi h]W\ hž`k]Y`k]W\ h][`5i Z`Åfi b [g_Ua dU [bYb`ØVYf`f]W\ h][Yg
 J Yf\ U`hYb`]a `GhfU» Ybj Yf_Y\ f`g]bX"

J Yf_Y\ fgi bZÅ``Y`a]h'Dc`]nY]'VYhY']][h. GhUh]gh]gW\ Y`9]bV`]W_Y

U\ f	5bnU\`XYf`I bZÅ``Y	J Yf`YhnhY`DYfgcbYb
&\$&\$	%"% ()	, &(
&\$&%	%"% \$, \$\$
&\$&&	%"&\$ \$, * +

8]Y`cV][Yb`NU\`Yb`nY][Ybž'XUgg`X]Y`5bnU\`XYf`J Yf_Y\ fgi bZÅ``Y
 a]h'Dc`]nY]ZU\ fnYi [Yb`]b`XYb`YhnhYb`J\ fYb`fY`Uh]j `ghUV`]
 [YV`]YVYb`]ghž`U`YfX]b [g` []Vh`Yg`Zi `_hi]YfYbXY`NU\`Yb`VY]`XYb
 j Yf`YhnhYb`DYfgcbYb``8]Y`5bZcfXYfi b [Yb`Ub`X]Y
 J Yf_Y\ fgg]W\ Yf\ Y]h'g]bX`XUa]h`cbh]bi]Yf`]W\ `cW\ ž`k Ygk Y [Yb
 gck c\`X]Y`Dc`]nY]`U`g`Ui W\ `X]Y`² ZZb'h]W\ _Y]h`Ub`Y]bYf
 J YfVYggYfi b [`XYf`J Yf_Y\ fgYfn]Y\ i b [`UfVY]hYb`gc``hYb``8i fW\

dfÄj Ybh]j Y'A U» bU\ a Yb' _ÖbbhYb'a Ö[`]WkYfk Y]gY'X]Y'NU\`Yb'j cb
I bZÄ`Yb'i bX'J Yf`Yhni b[Yb'[YgYb_h'k YfXYb"

⇒ 5bVYhfUWk h'X]YgYf'8 UhYb']gh'Yg'k]Wk h][ž'Y]bYa '6Yk i ggHgY]b'ZØf
X]Y'; YZU\ fYb']a 'GhfU» Ybj Yf_Y\ f'ni 'gWk UZZYbž']bgVYgcbXYfg'k Ybb
9]bgUhmZU\ fnYi [Y']a 'Gd]Y`g]bX" '8]Y'8Yi hgWk Yb
J Yf_Y\ fgg]Wk Yf\ Y]hgfUh'fBJ F Ł'i bX'X]Y'Dc`]nY]'VYhcbYb'ghYhg'X]Y
K]Wk h][_Y]h'j cb' [Y[YbgY]h][Ya 'FYgdY_h'i bX'5i Za Yf_gUa _Y]h']a
GhfU» Ybj Yf_Y\ f"

8YhU]`g

6Ygi Wk Yb'G]Y'i bg'Ui Z. 'b!U["XY