

9]bVfi W\]b'8]b_`U[Y'i bX
J Yf_Y\ fgi bZÄ`Y`]b'J YW\ hU. 'Dc`]nY]'gi W\ h
NYi [Yb

DfYggYa Y`Xi b[Yb`Ui g'J YW\ hU. '9]bVfi W\]b'GW\ i `Yž
J Yf_Y\ fgi bZÄ`Y`i bX': `i W\ h' bUW\ 'GW\ UXyb`!`5_hi Y`Y
9bhk]W_`i b[Yb`\]Yf`

7`cddYbVi f[#J YW\ hU

⇒ @UbX_fY]g'J YW\ hU`\UVYb'g]W\]b'XYb`YhnhYb`HU[Yb`a Y\ fYfY
J cfZÄ`Y`YfY][bYhž`X]Y`gck c`\`X]Y`c_U`Y`Dc`]nY]'U`g`Ui W\ `X]Y
6Øf[Yf`XYf`F Y[]cb`]b'5hYa ` \U`hYb`"6YgcbXYfg`Y]b'9]bVfi W\ žXYf
]b'XYf`GW\ i `ghfU» Y`]b'8]b_`U[Y`ghUhhZUbXž`gc f[h`ZØf`VYgc f[hY
FYU_h]cbYb`"l bVY`Ub bhY`HÄhYf`XfUb [Yb`]b`XUg`GW\ i ` [YVÄi XY`Y]b
i bX`Ybhk YbXYhYb`X]j YfgYg`8]YVYg[i h`8Yf`J cfZU`YfY][bYhY`g]W\
nk]gW\ Yb`XYa `&) "5i [i gh&\$&(`i a `%&.\$\$`l \f`i bX`XYa `&*"
5i [i gh&\$&(`i a `\$.&) `l \f`"8Yf` [YbUi Y`K Yfh`XYg`8]YVYg[i hg`]gh
V]g\Yf`bcW\ `b]W\ h`YfZUggh`k cfXYb`"8]Y`Dc`]nY]']b'8]b_`U[Y`V]hhYh
X]Y`6Yj Ö`_Yfi b[`i a `gUW\ X]Yb`]W\ Y`<]bk Y]gY`i bhYf`XYf
HY`YZcbbi a a Yf`\$(((' # ++(- ! \$"

l bhYfXYggYb`_Ua `Yg`Ua `A cbhU[ž`XYa `&*"5i [i gh&\$&(ž`ni
Y]bYa `J Yf_Y\ fgi bZU`]b'J YW\ hUž`VY]`XYa `Y]b`F UXZU\ fYf`Y]W\ h
j Yf`Yhnh`k i fXY`"l a `Yhk U`\$+.%) `l \f`k c`hY`Y]b`) (!Ä\ f][Yf
5i hcZU\ fYf`Ui g'J YW\ hUž`XYf`X]Y`GhfU» Y`? fi gYbgW\ `cdd`VYZ \fž
[YfUXYUi g`Ui Z`X]Y': ØW\ hY`Yf`GhfU» Y`ZU\ fYbž`U`g`Yg`ni f`?c`][g]cb
a]hY]bYa `) %!Ä\ f][Yb`A Ubb`Ui g`6U`i a ` _Ua `"8]YgYf`VYZUbX`g]W\
Ui ZXYa `F UXk Y[`i bX`_cbbhY`Y]bYb`Ghi fn`b]W\ hj Yf\]bXYfb`"8Yf
J Yf`Yhnh`k i fXY`i a [Y\YbX`]b`Y]b`? fUb`_Yb\Ui g`[YVfUW\ hž
k Ä\ fYbX`XYf`GW\ UXyb`Ub`XYb` : U\fnYi [Yb`Ui Z`Yhk U`(") \$\$`9i fc
[YgW\ Ähnh`k]fX"

J Yf_Y\ fgi bZU``Z'i W\ h'Ua : U`_Ybk Y[

9]b`k Y]hYfYf`J cfZU``]b`J YW\ hU`VYhf]Zh`Y]bY`J Yf_Y\ fgi bZU``Z'i W\ hž X]Y`nk]gW\ Yb`XYa`i&("5i [i gh`&\$&(i a`i&&.\$\$`I \f`i bX`XYa`i&*" 5i [i gh`&\$&(i a`i%%.\$\$`I \f`fY[]ghf]Yfh`k i fXY``9]bY`) +!`Ä\ f][Y : fUi` \UhhY`]\fYb`8U]a`Yf!6Ybn`G@?`i&`\$`Ui ZY]bYa`DUf_d`Uhn`Ua : U`_Ybk Y[`UV[YghY`hž`U`g`Y]b`V]g`Ub[`i bVY`UbbhYf J Yf_Y\ fghY]`bY\ a`Yf`j`Yfa`i`h]W\ `a`]h`Y]bYa` : U\ ffUX`XUg`<YW_ \]fYg`D_k`VYgW\`ÄX][hY``8Yf`J Yfi fgUW\ Yf``Y»`X]Y`i bZU``ghY``Y]a 5bgW\`i gg`\]bhYf`g]W\`i bX`VYa`Ø`hY`g]W\`b]W\hi`a`X]Y`fY[i`ÄfY G\UXYbga`Y`Xi b[``5i W\` \]Yf`g]bX`bcW\`_Y]bY`ϕZcfa`Uh]cbYb`ni`f G\UXYbg\`Ø`Y`VY`Ubbh`

8]YgY`J cfZÄ``Y`nY][Ybž`XUgg`X]Y`G]W\ Yf\Y]hg`U[Y`]a`@UbX`fY]g J YW\ hU`ni bY\ a`YbX` ; Y[YbghUbX`ÖZZYbh]W\ Yf`8]g_i`gg]cbYb`k`]fX" ϕgVYgcbXYfY`XYf`9]bVfi`W\`]b`XUg`G\i` \[YVÄi`XY`\Uh` : fU[Yb`ni`f G]W\ Yf\Y]h`ÖZZYbh]W\ Yf`9]b]f]W\hi`b[Yb`Ui`Z[Yk`cfZYb``G\i`Yb \UVYb`b]W\h`bi`f`Y]bY`6]`Xi`b[gZ`b_h]cbž`gcbXYfb`g]bX`Ui`W\`Y]b k`]W\h][Yf`6YghUbXhY]`XYf` ; Ya`Y]bgW\UZh`i`bX`\fY`G]W\ Yf\Y]h`\Uh \ÖW\ghY`Df]c]f]hÄh``9`hYfb`i`bX`G\ØYf`g]bX`VYgcf[hž`cV`]fY G\i`Yb`Ui`gfY]W\YbX`[YgW\Øhnh`g]bXž`i`bX`Yfk`UfhYbž`XUgg`X]Y Dc`]nY]U``Yg]b`]\fYf`A`UW\h`GhY`YbXY`i`bhYfb]a`a`hž`i`a`gc`W\Y HUhb`ni`j`Yf\]bXYfb`

8]Y`F`c``Y`XYf`Dc`]nY]

8]Y`Dc`]nY]`\Uh`VYfY]hg`A`U»`bU\`a`Yb`Yf[f]ZZYbž`i`a`X]Y`6Øf[Yf`ØVYf X]Y`J cf`_ca`a`b]ggY`ni`]bZcfa`]YfYb`i`bX`ni`f`A`]h\`ZY`Ui`Z[Yfi`ZYb" GcW]U`A`YX]U`gck`]Y`c`_U`Y`ϕZcfa`Uh]cbg`UbÄ`Y`gd]Y`Yb`XUVY]`Y]bY YbhgW\Y]XYbXY`F`c``Y" ϕgVYgcbXYfY`]b`_Y]bYfYb` ; Ya`Y]bXYb`g]bX cZi`bi`f`k`Yb][Y`5i [YbnYi [Yb`Ubk`YgYbXž`k`Yg\U`V`X]Y`Dc`]nY]`Ui`Z <]bk`Y]gY`Ui`g`XYf`6Yj`Ø`_Yfi`b[`Ub[Yk`]YgYb`]gh``5i`W\`Y]bY g]W\hVUfY`Dc`]nY]dfÄgYbn`]b`XYb`VYhfc`ZZYbYb` ; YV]YhYb`_ÖbbhY`ni`f UVgW\fYW`_YbXYb`K`]f_i`b[`VY]hfU[Yb`

Ni`gÄhn`]W\`nY][h`XYf`J Yf_Y\ fgi bZU``ž`k`]Y`k`]W\h][`Yg`]ghž`]b`Y]bYf J Yf_Y\ fg]bZfUghfi`_hi`f`G]W\ Yf\Y]hgghUbXUfXg`Y]bni` \U`hYbž`i`a` gc`k`c`\`5i`hcZU\`fYf`U`g`Ui`W\`F`UXZU\`fYf`ni`g`W\ØhnYb`

J Yf_Y\fgYfn]Y\i b[i bX`XUg`6Yk i gghgY]b`Z0f`X]Y`F]g]_Yb`ja
GhfU» Ybj Yf_Y\f`g]bX`i bYf`Àgg`]Wł ži a`l bZÀ`Y`ni`fYXi n]YfYb"
5i Wł`dfÀj Ybh]j Y`A U» bU\`a Yb`_0bbhYb`\Y`ZYbž`i a`gc`WłY`J cfZÀ`Y`
]b`Ni`_i bZi`ni`j Yf\]bXYfb"

8 Yf`@UbX`fY]g`J YWł hU`ghY`h]j cf`XYf`< YfUi gZcfXYfi b[ž`gck c\`i a
X]Y`G]Wł Yf\Y]h`gY]bYf`60f[Yf`ni`gc f[Yb`U`g`Ui Wł`X]Y`9fa`]hhi b[Yb
ni`XYb`j YfgWł]YXYbYb`J cfZÀ`Y`b`j cfUbni hfY]VYb`"8]Y`b`ÀWł ghYb
GWł f]hhY`XYf`Dc`]nY]`k YfXYb`Yb hgWł Y]XYbX`XUZ0f`gY]bž`k]Y`X]Y
60f[Yf`Ui ZX]YgY`J cfZÀ`Y`fYU[]YfYb`i bX`k Y`WłY`A U» bU\`a Yb`ni`f
; Yk`À\`fY]ghi b[`XYf`G]Wł Yf\Y]h`]b`XYf`F Y[]cb`Yf[f]ZYb`k YfXYb"

K UWł gUa`_Y]h`i bX`G]Wł Yf\Y]h

8]Y`U`_hi Y`Y`@U[Y`nY][hž`XUgg`K UWł gUa`_Y]h`i bX`[Y[YbgY]h][Y
l bhYfgh0hni b[`]b`XYf`B UWł VUfgWł UZi`i bYf`Àgg`]Wł`g]bX`"» XYf`_Ubb
Y]bYb`6Y]hfU[`ni`f`G]Wł Yf\Y]h`Y]ghYb`i`gY]Y`g`Xi fWł`XUg`A Y`XYb
j YfX`ÀWł h][Yf`5`_hj]h`hYb`cXYf`Xi fWł`Y]bYb`fYgdY`_hj c`Y`b
5i ghUi gWł`0VYf`G]Wł Yf\Y]hgUb`]Y[Yb`"» Ymh`]Wł`]Y[h`Yg`Ub`XYf
; Ya`Y]bgWł UZž`ni`gUa`a Ybni UfVY]hYbž`i a`XUg`» YVYbgi a`ZY`X
g]Wł YfYf`ni`[YghU`hYb"

8 YhU]`g`ni`XYb`9]bVf0Wł Yb`]b`GWł i`Yb

GWł i`Y]bVf0Wł Y`g]bX`Y]b`k]YXYf_Y\`fYbXYg`DfcV`Ya`i`]b`j]Y`Yb
F Y[]cbYb`"8]Y`l fgUWł Yb`Z0f`gc`WłY`GhfUZhUhYb`_0bbYb`j]Y`Z`À`h][
gY]bž`Y]bgWł`Y»`]Wł`J UbXU`]ga`i`gž`8 fc[Yba`]ggVfUi Wł`cXYf`X]Y
Gi WłY`bUWł`K Yfh[Y[Ybgh`ÀbXYb`"» U`i`h`Y]bYf`Ghi`X]Y`XYg`**6i bXYg
XYi hgWł Yf`? f]a]bU`VYUa hYf`**Ui`g`XYa`i`» \`f`&`\$`%`g]bX
9]bVf0Wł Y`]b`6`]Xi b[gY]bf]Wł hi b[Yb`]b`XYb`i`YmhYb`i`» \`fYb
hYbXYbn]Y`»`Ub[Ygh]Y[Yb`"» gVYgcbXYfY`_Y]bYž`cZi`bVYk UWł hY
GWł i`Yb`g]bX`VYj cfni [hY`N]Y`Yž`XU`g]Y`]b`XYf`F Y[Y`k Yb][Yf
G]Wł Yf\Y]hgY]b]Wł hi b[Yb`U`g[f0» YfY`GWł i`Yb`Ui`Zk`Y]gYb"

»`8]b`_U[Y`k`i`fXY`XUg`GWł i`[YV`Ai`XY`n]Y`[Yf]Wł hY`h`Ui`g[Yk`À`hž
k Ug`Ui`ZY]bY`j cfUi`ggWł Ui`YbXY`D`Ubi b[`XYf`H`À`hYf`gWł`]Y» Yb
`Àgg`h`9g`V`Y]Vh`UVni`k UfhYbž`cV`X]YgY`GhfUZhUh]b`Y]bYb`[f0» YfYb
Ni`gUa`a Yb`Ub[`j`cb`?`f]a]bU`]h`À`h]b`XYf`F Y[]cb`dUggh"

J Yf_Y\ fgi bZÀ`Y. 'G]W\ Yf\ Y]hg`U[Y`i bX
DfÀj Ybh]c bga U» bU\ a Yb

8]Y`J Yf_Y\ fgi bZU`ghU]gh]_]b`8Yi hgW\`UbX`nY][hž`XUgg`X]Y`NU\`
XYf`J Yf`YhnhYb`]b`XYb`YhnhYb`]b`fYb`fØW`Ài Z][`]ghž`Ui W\`k Ybb
Y]bnY`bY`l bZÀ`Y`k Y]hYf\]b`hfU[]gW\`YbXYb``@Ui h`XYa`
**GhU]gh]gW\ Yb`6i bXYgUa h`_Ua`Yg`]a`]b`f`&\$&&`ni`Yhk`U`&ž`
A`]]`cbYb`J Yf_Y\ fgi bZÀ`Ybž`k cVY]`ØVYf` "\$\$\$\$`A YbgW\ Yb
j Yf`Yhnh`k i fXYb``8]Y`a Y]ghYb`l bZÀ`Y`YfY][bYb`g]W\`]bbYfcfhgž
\Ài Z][`Ui Z[fi bX`a YbgW\`]W\ Yb`J YfgU[Ybg`"**

8]Y`G]W\ Yf\ Y]hg`U[Y`]b`J YW\ hU`_ØbbhY`Xi fW\`dfÀj Ybh]j Y
A U» bU\ a Yb`k]Y`n``6``a Y\ f; YgW\ k]bX][`_Y]hg`cbhfc``Yb`cXYf
Y]bY`j YfVYggYfhY`]b`ZfUghfi`_hi`f`ZØf`F UXZU\ fYf`j YfVYggYfh`k YfXYb`
6Y]`XYa`_U`hi`Y`Yb`J cfZU``VYhfUZ`XYf`l bZU``Y]bYb`) %!`À\ f][Yb
F UXZU\ fYfž`k Ug`Ui Z`X]Y; YZU\ fYb`\]bk Y]ghž`X]Y`F UX`Yf`]a
GhfU» Ybj Yf_Y\ f`Ui`g[YgYhnh`g]bX``J]Y`Y`GhÀ`XhY`\ UVYb`VYfY]hg
]h]Uh]j Yb`ni`f`J YfVYggYfi`b[`XYf`J Yf_Y\ fgg]W\ Yf\ Y]h[YghUfhYhž
XUni`nÀ`Yb`VYggYfY`F UXk Y[Y`i bX`: U\ ffUX!5VghY`Ub`U[Yb`"

F YW\ h`]W\ Y`GW\ f]hhY`VY]`J Yf_Y\ fgi bZU``Z`i W\ h

8]Y`J Yf_Y\ fgi bZU``Z`i W\ h]gh`Y]b`Yfbgh\ UZhYg`DfcV`Ya ž`XUg`]b
8Yi hgW\`UbX`_cbgYei Ybh]j YfZc`[h`k]fX``K Yf`U`g`J Yfi fgUW\ Yf
Y]bYb`l bZU``\Uh`i bX`g]W\`i bYf`Ui Vh]j ca`l bZU``cfh`YbhZ`Yfbhž
a UW\ h]g]W\`ghfUZVUf``@Ui h`**6i bXYga]b]ghYf]i a`ZØf`J Yf_Y\ f
i bX`X][]hU`Y`]b`ZfUghfi`_hi`f`g]bX`X]Y`GhfUZYb`ZØf`: U\ fYfZi W\ h
\cW\ ž`]b`_i`g]j Y; Y`XghfUZYb`i bX`a Ø[`]W\ Yb`: fY]\Y]hgghfUZYb`
Ni XYa`g]bX`: U\ fYf`j YfdZ]W\ hYhž`\ fY`6YhY`][i b[`Ub`Y]bYa`l bZU``
ni`a Y`XYb`i bX`X]Y`YfZcfXYf`]W\ Yb`]b`Zcfa Uh]cbYb`Ui`gni`hUi`gW\ Ybž
i a`X]Y`5bgdfØW\ Y`Ui Z`GW\ UXYbgYfgUhn`ni`_`ÀfYb`"**

]b`XYf`U`hi`Y`Yb`G]hi`Uh]cb`]b`J YW\ hU`_ØbbhY`X]Y`Dc`]nY]`Xi fW\
NYi [Yb`\]bk Y]gY`cXYf`J]XYcUi ZbU\ a Yb`j`cb
, VYfk UW\ i b[g_Ua YfUg`j cf`Cfh`XYb`J Yfi fgUW\ Yf`Yfa]hY`b`i bX
X]Y`Ybhgd`fYW\ YbXYb`A U» bU\ a Yb`Y]b`Y]hYb``HÀ`hYf`[YfUhYb`c`Zi]b
GW\ k]Yf][`_Y]hYbž`k Ybb`g]Y`[YZUgg`h`k YfXYbž`ni`a`U`X]Y

Ni gUa a YbUfVY]h'a]h'XYf'Dc`]nY]']b'gc`W\Yb': Ä`Yb`YbhgW\Y]XYbX
]gh"

8YhU]`g

6Ygi W\Yb`G]Y`i bg`Ui Z.`b!U["XY