

DfncnYgg [Y [Yb 'a i ha U» `]WXYb '?]`Yf. 'K Yf
ghYW_h'k]f_`]WXY `]bhYf'XYa 'A cfX3

5b [YV`]WXYf'GUi bU!?'`Yf'E Yf]a '8" ghY`h']b'`nY`cY'j cf
; Yf]WXYh'9f' [YghUbX`Y]bYb'A cfXžXYb`Yf'a Ò[`]WXYfk Y]gY
b]WXYh'VY []b ["

⊕'`nY`cY`VY []bbh'Y]b`cWXY]bhYfYggUbhYf'DfncnYgg [Y [Yb`XYb
% !`A`f][Yb'E Yf]a '8" `Ui g'5`VUb]YbžXYf'j YfX`WXYh][h'k]fXž`Y]bYb
[Yk U`hgUa Yb'A cfX`VY [Ub [Yb'ni ` \UVYb"5a ' &) "'Bcj Ya VYf'&\$&'
k i fXY`]b`XYf'BA`Y`XYf' <c`ghYb'H`Yfa Y `]b'? U`hYb_]fWXYbž
GWXYgk][!<c`ghY]bž`X]Y`@Y]WXY`Y]bYg'&+!`A`f][Yb'A UbbYg
[YZ bXYbžXYf'Ui Z[fi bX`Y]bYg'?cdZgWXY ggYg'ghUfV"8 Ug`CdZYfž
FYc`g`<"žgc``]b'8fc [Yb!; YgWXY`Z`Y`j Yfk]W_Y`h'[Yk YgYb`gY]bž`k Ug
<]bhYf[fØbXY`ni `gY]bYa `[Yk U`hgUa Yb'HcX`]]YZYfh"

8]Y'5b`_U[Y [Y [Yb'E Yf]a '8" `k i fXY`]bg'Fc`Yb [YVfUWXYhž`U`g`Yf
g]WXY`k Yb][`bUWXY`XYa 'J cfZU`XYf'Dc`]nY]`ghY`hY`i bX` [YghUbXž
Y]bYb'A Ubb' [YhØhY`hni ` \UVYb"8cWXY`gWXYcb`VU`X`_Ua `XYf': U``]bg
K Ub_Yb"9fa]hYf`Yf_UbbhYb`i b [YfY]a h`Y]hYb`]b`XYf'5i ggU[Y
XYg'5b [Y`_U[hYb`i bX`VYa Yf_hYbž`XUgg`X]YgYf`b]WXYh`Y]ba U`XYb
@Y]WXYbZ bXcfh`_UbbhYž`k c`Y]b`GdØf`i bX`X]Y`@Y]WXY`XYg`CdZYfg
YbhXYW_hY"8Yg`K Y]hYfYb`k i fXYb`_Y]bY'8B5!Gdi fYb`j cb`]\a `Ua
HUhc`fh [YZ bXYb"8]YgY`HUhgUWXYb`k YW_Yb`XYb`J YfXUWXYhž`XUgg
E Yf]a '8" `i bhYf`i a gh`AbXYb`Y]b`ZU`gWXYg; Ygh`AbXb]g`UV [Y`Y [h
 \UVYb`_ØbbhY"

I b`_`UfY`A`ch]j `U [Y`i bX`a Ò[`]WXY
<]bhYf [fØbXY

8]Y'5i gg]WXYhž`XUgg`E Yf]a '8" `a Ò[`]WXYfk Y]gY`j cb`XYb
hUhg`WXY`WXYb`H`hYfb`cXYf`XYfYb`?ca`d`]nYb`; Y`X`ZØf`gY]b

; YghÀbXb]g`Yf\U`hYb` \UVYb`_ÒbbhYž`k]fX`Xi fW`bYi Y
9fa]h`i b[Yb`i bX`NYi [YbUi ggU[Yb`i bhYfa Ui Yfh"
≠g]XYf]bZcfa Uh]cbYb`VYf]W`hYbž`XUgg`]\a`i [YgU[h`i k i fXYž`Yf
k ØfXY`VY`c`b`h`k YfXYbž`k Ug`V]g`Ub[`YXcW`b]W`h`i]b`X]Y`HUh
i a [YgYhnh`k i fXY`"8]Y`GhUUhgUb`k U`hgW`UZh`VYhc`b`h`X]Y
Bch`k YbX][_Y]hž`X]Y`i a ghÀbXY`XYg`j Yfa Y]bh]W`Yb` ; YghÀbXb]ggYg
ni ` _`ÀfYb"

C VYfghUUhgUb`k U`h`DYhYf`A Ø`Yf!F U`ck`Yf`_`Àfhž`XUgg`X]Y
GhUUhgUb`k U`hgW`UZh`X]Y` [fØbX`]W`Yb`9fa]h`i b[Yb`ni a`HUhcfh`i bX
ni`k Y]hYfYb`6Yk Y]ga UhYf]U`Yb`U`g` ; fi bX`U[Y`ZØf`X]Y`5b`_U[Y
g]Y`h`"8]Y`5b`_U[Y`Ui hYh`Ui Z`HchgW`U[ž`k cVY]`Ui W`X]Y
A Ò[`]W`_Y]hYb`Y]bYg`A cfXYg`]a`FUi a`ghY`Yb`"8]Y`HUh`gc``]b
Y]bYf`G\]g\U!6Uf`ghUhh[YZ] bXYb` \UVYbž`[YZc`[h] cb`XYdcb]YfYb
XYf`@Y]W`Y`]b`XYf`BÀ`Y`XYf`H`Yfa Y`"9]b`k Y]hYfYg`?f]hYf]i a ž`XUg
@]W`h`i]bg`8i b`_Y`Vf]b[Yb`_ÒbbhYž`]gh`XUg`5`hYf`XYg`5b[Y`_U[hYb`
Ni a`NY]hdi b`h`XYf`HUh`k Uf`E Yf]a`8`Yfgh`%+`!`fY`U`hž`k Ug`XYb
Dfc`nYgg`i bhYf`5i ggW`i gg`XYf`? ZZYbh]W`_Y]hYfa Ò[`]W`Yb`"Y» "

8]Y` : `i W`h`XYf`k]f`_]W`Yb`HÀhYf

8]Y`hUhgÀW`]W`J YfUbhk`cfh]W`Yb`_ÒbbhYb`g]W`YXcW`Ui ZXYf
: `i W`h`VYZ]bXYb`"8]Y`9fa]h`Yf`[Y`Yb`XUj`cb`Ui gž`XUgg`nk Y]
A ÀbbYfž` : Yf\Uh`?"i bX`GY`Ua]`7`ž`]b`X]Y`HUhYb`j Yfk]W`Y`h`g]bX
i bX`g]W`a Ò[`]W`Yfk Y]gY`]b`X]Y`HØf`Y]`UV[YgYhnh`\UVYb`"G]Y
XØfZhYb`VY]`GhfY]h[_Y]hYb`i a`8fc[Yb`!; YgW`ÀZhY`Y]bY`F`c`Y
[Ygd]Y`h`\UVYb`"≠hYfYggUb`hYfk Y]gY`Yf`\ÀfhYhYb`g]W`X]Y
J YfXUW`hga`ca YbhY`[Y[Yb` : Yf\Uh`?"Xi fW`A UhYf]U`ž`a]h`XYa`X]Y
@Y]W`Y`i a`k]W`Y`h`k Uf`"?Ài ZY`]a`6Ui a`Uf`h`i bX`UV[Y`ØfhY
; YgdfÀW`Y`VfUW`hYb`X]Y`Dc`]nY]`Ui Z`X]Y`Gdi f`XYg`J YfXÀW`h][Yb`"

: Øf`X]Y`5b`\Òfi b[`]a` ; Yf]W`h`k]fX`X]Y`GW`i ggZc`[Yfi b[`Yfk UfhYhž
XUgg`E Yf]a`8`"Y]b` , VYfV`Y]VgY`Y]bYg`[fØ» YfYb`?f]a]bU`ZU`g`]ghž
XYggYb`k U`fY` ; Yg]W`hYf`bcW`Ui Z[YXYW`h`k YfXYb`a ØggYb`
8UbYVYb`k i fXY`X]Y`A Ò[`]W`_Y]h`X]g`_i h]Yfhž`XUgg`XUg` ; YghÀbXb]g
XYg`% , !`À`f][Yb`b]W`h`bi f`Xi fW`F`Yi Yž`gcbXYfb`Ui W`Xi fW`8fi W`
i bX`Z]bUb`n]Y`Y`J YfgdfYW`Yb`ni ghUbXY`_Ua` "

; Yf]W\hgdfYWX Yf'H]a c': i W\g`VYf]W\hYhž`XUgg`X]Y
<Ui dhj Yf\UbX`i b[`Ua` _ca` a YbXYb`8 cbbYfghU[`Zcfh[YgYhnh
k YfXYb`k]fX`"8 UVY]'gc`Yb`?f]a]bU`VYUa hY`gck]Y
GUW\j Yfgh`AbX][Y`[Y\Øfh`k YfXYbž`i a`X]Y`VYghY\YbXYb`Nk Y]ZY`Ub
E Yf]a`8 "g`J Yfk]W`_i b[`ni` _`ÄfYb`i bX`X]Y`K U\`f\UZh][_Y]h`gY]bYf
5i ggU[Yb`]bhYbg]j Yf`ni`ØVYfdfØZYb"

8]Y`_ca`d`YI`Yb`J`Yfghf]W`_i`b[`Yb`]a`:`U`

8Yf`:`U`nY][hž`k]Y`_ca`d`YI`_i`bX`j]Y`gW\]W\h][`X]Y`J`Yfghf]W`_i`b[`Yb
]a`6YfY]W\`XYf`cf[Ub]g]YfhYb`?f]a]bU`]h`h`g]bX`"8 Ug`A`ch]j`_`b]hYf
XYa`A`cfX`i`bX`X]Y`8]g`fYdUb`n`nk]gW\Yb`; Ygh`AbXb]g`i`bX
cV`Y`_h]j`Yb`6Yk`Y]gYb`k`YfZYb`Yf\YV`]W\Y`:`fU[`Yb`Ui`Z`B`YVYb`E`Yf]a
8`"ghY\Yb`k`Y]hYfY`DYfgcbYb`i`bhYf`J`YfXUW\hž`XcW\`X]Y
:`Uggi`b[`g`cg][`_Y]h`ØVYf`X]Y`; YgW\Y\`b]ggY`a`UW\h`XYb`:`U`i`a`gc
Xf`Ab[`YbXYf`i`bX`a`Ub`k`]fX`g]W\`a`]h`XYb`<]bhYf[`fØbXYbž`gck`c`\`
a`]h`XYb`HUhYb`U`g`Ui`W\`XYf`A`ch]j`_U[`Yž`]bhYbg]j
Ui`gY]bUbXYfgYmYb`a`ØggYb"

9]bV`]W`_]b`X]Y`8`fc[`Yb`_f]a`]b`U`]h`h`b GW\`Ygk][`!<`c`ghY]b

8]Y`8`fc[`Yb`_f]a`]b`U`]h`h`\`Uh`]b`8`Yi`hgW\`UbXž`]bgVYgcbXYfY`]b
GW\`Ygk][`!<`c`ghY]bž`]b`XYb`Y`hnhYb`J\`fYb`ni`[`Ybca`a`Yb`"8]YgYf
5bgh]Y[`]gh`b]W\`h`bi`f`Ui`Z`XUg`c`_U`Y`5b[`YV`ch]j`cb`8`fc[`Yb
ni`fØW`_ni`ZØ\`fYbž`gcbXYfb`Ui`W\`Ui`Z`X]Y`j`Yfgh`Ä`f`_hYb`5`_h]j`]h`h`Yb
]bhYfbUh]cbU`Yf`8`fc[`Yb`_UfhY`Yž`X]Y`]b`F`Y[`]cbYb`a`]h`b]YXf][`YfYb
Dc`]nY]fYggci`fW`b`cdYf]YfYb`"b`GW\`Ygk][`!<`c`ghY]bž`Y]bYa
6i`bXYg`UbXž`XUg`Ub`X]Y`?`ØghY`[`fYb`nhž`[`]Vh`Yg`Y]bY`ghY][`YbXY`NU\`
j`cb`:`Ä`Ybž`]b`XYbYb`8`fc[`Yba`]ggVfUi`W\`a`]h`; Yk`U`hj`YfVfYW\Ybž
k]Y`A`cfX`cXYf`H`ch`gW\`U[`ž`]b`J`YfV]bXi`b[`ghY`h"

9]bY`Ghi`X]Y`XYg`6i`bXYg`_f]a`]b`U`Ua`hg`f`b?`5`Ě`nY][`hž`XUgg`&`\$`&`&`]b
8Yi`hgW\`UbX`Yhk`U`&`\$`\$`\$`\$`GhfUZhUhYb`]a`Ni`gUa`a`Yb\Ub[`]a`]h
8`fc[`Yb`fY[`]ghf]Yfh`k`i`fXYbž`]cb`XYbYb`Y]b`Yf\YV`]W\Yf`HY`]b`i`bX
i`a`[`fØ»`YfY`Gh`Ä`hY`GW\`Ygk][`!<`c`ghY]bg`ghUh`ZUbX`"8]Yg`i`a`ZUgg
gck`c`\`XYb`<`UbXY`a`]h`]Y[`U`Yb`Gi`VghUb`nYb`U`g`Ui`W\`

; Yk U`hj YfVfYWX Yb`ja`8fc[Yba`j]Yi`"8]Y`8i b_Y`n]ZYZf`]gh`YXcW
cZhj]Y`"0\Yfz`XUj]Y`Y`JcfZ`"Y`b]W`h[Ya`Y`XYhk YfXYb"

; YgYhn`]W`X`Y`F`U`a`Y`b`V`Y`X]b[i`b[Yb`i`b`X`X`Y`f`Y`b
5i`gk]f`_i`b[Yb

⊕`8Yi`hgW`UbX`]gh`XYf`i`a`[Ub[`a`]h`8fc[Yb`Xi`fW`ghfYb[Y
; YgYhnY`[YfY[Y`h`X]Y`gck`c`"XYb`?cbgi`a`U`g`Ui`W`X`Y`b`J`Yf`Ui`Z
VYhfYZZYb`"8Ug`6Yh`Ai`Vi`b[ga`]hhY`[YgYhn`f`b`hA`; E`_`Ugg]Z]n]Yfh
8fc[Yb`]b`j`YfgW`]YXYbY`?UhY[cf]Yb`i`b`X`"Y[h`ZYgh`z`k`Y`W`Y`GhfUZYb
VY]`J`Yfgh`0`Yb`j`Yf`A`b[h`k`YfXYb`"8]Y`ghfUZfYWX`h`]W`Y`b
?cbgYei`YbnYb`Z0f`8fc[Ybj`Yf[Y`Y`b`j`Uf]]YfYb`Y`b`UW
ei`Ubh]hUh]j`Yf`GW`k`YfY`X`Y`g`J`YfVfYWX`Ybg`i`b`X`X`Y`f`5`fh`X`Y`f
Gi`VghUbn`ž`Ui`»`YfXYa`k`]fX`nk`]gW`Y`b`9`fgh`h`Y`f`b`i`b`X
K`]YXYf`c`i`b[gh`h`Y`f`b`i`bh`Y`fgW`]YXYb"

8]Y`ghfUZfYWX`h`]W`Y`b`A`U`»`b`U`a`Y`b`g]b`X`X`U`f`U`i`Z`U`i`g[Yf]W`h`Y`h`z`b]W`h
bi`f`X]Y`0`ZZY`bh]W`Y`G]W`X`Y`f`Y`h`ni`i`[Yk`A`f`Y]ghYb`ž`gcb`XYfb`Ui`W
dchYbn]Y`"Y`H`h`Y`f`UV`ni`gW`f`Y`W`_`Y`b`"8Y`b`bc`W`i`[]V`h`Y`g]a`a`Y`f`k`]YXYf
8YV`U`h`Y`b`0`V`Y`f`X]Y`9`ZZY`_`h]j`]h`h`X]Y`g`Y`f`; YgYhnY`ž`V`Y`g`c`b`X`Y`f`g]a
<]b`V`]W`_`Ui`Z`X]Y`J`Y`fa`Y]Xi`b[`j`cb`; Yk`U`hj`YfVfYWX`Yb`ž`X]Y`ja
Ni`g`Ua`a`Y`b`Ub[`a`]h`8fc[Yb`Ub`X`Y`gh`Y`b`"G`h`i`X]Y`b`Ub`UV`Y`b
[YnY][h`z`X`Ugg`d`f`A`j`Y`bh]j`Y`D`fc[f`Ua`a`Y`i`b`X
5i`Z`_`A`fi`b[g`_`Ua`d`U[b`Y`b`Y`V`Y`b`Z`U`g`Y`b`hgW`Y]X`Y`b`X`Y`; U`_`hc`f`Y`b`ni`f
6Y`_`Aa`d`Z`b[`X`Y`f`8`fc[Yb`_`f]a`]b`U`]h`h`g`Y]b`_`0`b`Y`b"

Ni`g`Ua`a`Y`b`U`f`V`Y]h`X`Y`f`6`Y`0`f`X`Y`b`ja`i`?`Ua`d`Z
[Y[Yb`X]Y`8`fc[Yb`_`f]a`]b`U`]h`h

⊕`GW`Y`gk`][!<c`ghY]b`U`f`V`Y]h`Y`b`j`Y`fgW`]YXYbY`6`Y`0`f`X`Y`b
ni`g`Ua`a`Y`b`ž`i`a`X`Y`f`8`fc[Yb`_`f]a`]b`U`]h`h`Y`ZZY`_`h]j`Y`f
Y`bh[Y[Yb`ni`k`]f`_`Y`b`"8]Y`g`g`W`"Y`»`h`X]Y`D`c`n]Y]ž`X`U`g
@`U`b`X`Y`g`_`f]a`]b`U`Ua`h`z`X]Y`G`h`U`h`g`U`b`k`U`hgW`U`Z`h`g`c`k`]Y`0`f`h`]W`Y
; Ygi`b`X`Y]hgV`Y`0`f`X`Y`b`Y]b`"⊕`X`Y`b`Y`h`h`Y`b`U`f`Y`b`U`h`X]Y
Ni`g`Ua`a`Y`b`U`f`V`Y]h]b`b`Y`f`U`V`X]Y`g`Y`f`⊕`gh]h`h]c`b`Y`b`ni`[Y`b`c`a`a`Y`b`ž
i`a`i`⊕`Z`c`f`a`U`h]c`b`Y`b`Ui`g`ni`h`Ui`g`W`Y`b`i`b`X`[Ya`Y]b`g`Ua`Y`C`d`Y`f`U`h]c`b`Y`b
Xi`f`W`ni`Z0`f`Y`b"

- F Y [Y`a Å»] [Y`GW i`i b [Yb`i bX`K Y]hYfV]`Xi b [Yb`ZØf`X]Y Dc`nY]VYUa hYbž`i a`U_hi Y`Y`HfYbXg`i bX`A Yh`cXYb`i]a 8fc [Yb`UbXY`ni`Yf_YbbYb"
- 9]bf]W h i b [`j cb`GdYn]U`Y]b`Y]hYb`ni f`6Y_Åa dZ b [`j cb 8fc [Yb_f]a]bU`]hÅh"
- ı VYfk UW i b [`i bX`GW bØZY`U_h]cbYb`i]b J YfXUW hg [YV]YhYb`ZØf`8fc [Yb`UbXY`"

C V k c`X]YgY`A U» bU`a Yb`ni bY`a Ybž`V`Y]Vh`X]Y
 <YfUi gZcfXYfi b [`[fc» ž`XU`X]Y`8fc [Yb_f]a]bU`]hÅh`cZh`Yb [`a]h
 gcn]U`Yb`DfcV`Ya Ybž`k]Y`5fa i`h`cXYf`DYfgdY_h]j`cg][`_Y]hž
 j Yf_bØdZh`]gh"

8 Y h U]`g

6 Y gi W X Y b`G]Y`i b g`Ui Z.`b!U ["XY