

G]W\ Yf\ Y]hgghi ZY`Yf\ Ò\ h. `B 5 HC!6 UgY
; Y]`Yb_]fW\ Yb`j YfghÀf_h
GW\ i hna U» bU\ a Yb

B Uhc`Yf\ Ò\ h]G]W\ Yf\ Y]hgghi ZY`Ua` :`i [d`Uhn`; Y]`Yb_]fW\ Yb`
Ui Z[fi bX`a Ò[`]W\ Yf`6YXfc\ i b[Yb/A]hUfVY]hYf`k i fXYb`
j c fgc f[`]W\ `bUW\` < Ui gY` [YgW\]W_h"

⇒ a`bcfXf\ Y]b!k YghZÀ`]gW\ Yb`; Y]`Yb_]fW\ Yb`[]Vh`Yg`XYfnY]h`Yf\ Ò\ hY
G]W\ Yf\ Y]hgj cf_Y\ fi b[Yb`VY]a` :`i [d`Uhn`XYf`B 5 HC""8]YgY
A U» bU\ a Yb`k i fXYb`U`g`F YU_h]cb`Ui Z`gdYn]Z]gW\ Y
bUW\ f]W\ hYbX]Ybgh]W\ Y`⇒ Zcfa Uh]cbYb`Yf[f]ZYbž`X]Y`Ui Z`Y]bY
dchYbn]Y`Y`6YXfc\ i b[`]\]bk Y]gYb""9]b`GdfYW\ Yf`XYf`6Ug]g
VYghÀh][hYž`XUgg`A]hUfVY]hYfž`XYfYb`HÀh][_Y]hYb`b]W\ h`i ba]hY`VUF
ZØf`XYb`9]bgUhn`YfZc`XYf`]W\ `g]bXž`j c fgc f[`]W\ `bUW\` < Ui gY
[YgW\]W_h`k i fXYb""9g`k i fXY`VYhc`bž`XUgg`X]Yg`_Y]b`5b`Ugg`ni f
6Ygc f[b]g`gY]ž`gcbXYfb`Y]bY`dfAj Yb]j Y`A U» bU\ a Yž`i a`XYb`
6Yhf]YV`Ui ZFYW\ hni Yf\ U`hYb"

8]Y`J cfZÀ`Y`XYf`Y`hnhYb`K cW\ Y`_ÒbbhYb`X]YgY`G]W\ Yf\ Y]hgghi ZY
VYY]bZi`ggh`\UVYb""⇒ XYf`BÀ\Y`XYg`A]]hÀfghUbXcfhg? Ò`b!K U\ b
[UV`Yg`a Y\ fYfY`g]W\ Yf\ Y]hgfY`Yj UbhY`9fY][b]ggY""<]Yf`Yfa]hY`b
gck c`\`X]Y`Dc`nY]`U`g`Ui W\`XYf`GhUUhgW\ i hn]b`6Yni [`Ui ZY]bYb
J cfZU`ž`XYf`a Ò[`]W\ Yfk Y]gY`Y]bYb`GUVchU[YU_h][Y[Yb`X]Y
6i bXYgk Y\ f`VY]b\ U`hYhY""5i W\`]b`; Y]`Yb_]fW\ Yb`gY`Vgh`g]bX`]b
`YhnhYf`NY]h]j YfXÀW\ h][Y`5_h]j]hÀhYb`VYcVUW\ hYh`k cfXYb"

G]W\ Yf\ Y]hgcdYfUh]cbYb`]a` :`c_i`g

8YfnY]h][`g]bX`X]Y`6Y\ ÒfXYb`U_h]j ž`i a`a` Ò[`]W\ Y`F]g]_Yb`ni
VYk YfhYb""8]Y`Dc`nY]`\Uh`VYghÀh][hž`XUgg]a`Ni`gUa`a`Yb\Ub[`a]h
XYf`Yf\ Ò\ hYb`G]W\ Yf\ Y]hg`U[Y`9]bgUhn`fÀZhY`a`cV]`g]Yfh`k i fXYb"

?cb_fYhY`bZcfa Uh]cbYb`ØVYf`X]Y`5bnU\`XYf`Y]b[YgYhnhYb
6YUa hYb`k i fXYb`YXcW`b]W`h j YfØZZYbh]W`h"8]Yg`[YgW`Y\`h]b
XYf`FY[Y`Ui`g; fØbXYb`XYf`C dYfUh]cbU`]hÅhi bX`ni f`K U\fi b[`j cb
G]W`Yf\`Y]hgghfUhY[`]Yb"

9]b`]b`G]W`Yf\`Y]hg_fY]gYb`[Ya`Y`XYhYf`J cfZU``VYa`Yf_hY`X]Y
j cfØVYf[Y\`YbXY`YghbU\`a`Y`Y]bYf`DYfgcb`]b`XYf`BÅ\`Y`XYg
:`i [\UZYbg"8]YgY`YghbU\`a`Y`X]Yb`hY`XYf`6YfU[i b[ž`YXcW
_cbbhY`XYf`J YfXUW`h[Y[Yb`X]Y`DYfgcb`b]W`h`Yf\`ÅfhY`h`k`YfXYb"
Gc`W`Y`A`U»bU\`a`Yb`g]bX`b]W`h`i`b[Yk`Ø\`b`]W`ž`k`Ybb`Yg`i`a`X]Y
DfÅj`Ybh]cb`j`cb`dchYbn]Y`Yb`6YXfc\`i`b[Yb`[Y\`hž`]bgVYgcbXYfY`]b
a`]hÅf]gW`Yb`?cbhYi`hYb"

8]Y`F`c``Y`XYf`B`5`HC`i`b`X`XYf`5`k`U`W`g

; Y]Yb_]fW`Ybž`XUg`g]W`]b`XYf`BÅ\`Y`j`cb`5`U`W`Yb`Ub`XYf
b]YXYf`ÅbX]gW`Yb`; fYbnY`VYZ]bXYhž`]gh`Y]b`nYbhfU`Yf`GhUbXcfh`ZØf
X]Y`B`5`HC`"<]Yf`g]bX`X]Y`gdYn]Y`Yb`5`k`U`W`g!:`i [nYi [Y`ghUh]cb]Yfž
k`Y`W`Y`ZØf`\`fY`,`VYfk`U`W`i`b[g!`i`bX`?ccfX]b]Yfi`b[gUi`Z[UVYb`]a
@`Zhfi`a`VY`_`Ubb`h`g]bX""8Ug`K`cfh`5`k`U`W`g`ghY\`h`ZØf`5]fVcfbY
K`Ufb]b[`UbX`7`cb`hfc`GmghYa`ž`k`Ug`Ui`Z`8`Yi`hgW`Y`hk`U`U`g
`i`Zh[YghØhnhYg`fØ\`k`Ufb!`i`bX`@]hgmghYa`ØVYfgYhnh`k`YfXYb
_`Ubb""8]YgY`:`i [nYi [Y`gd]Y`Yb`Y]bY`YggYbh]Y`Y`F`c``Y`VY`XYf
G]W`YfghY`i`b[`XYf`@`Zh\`c\`Y]hi`bX`XYf`ZfØ\`nY]h[Yb`9f`_`Ybbi`b[
j`cb`6YXfc\`i`b[Yb"

8]Y`U`_`hi`Y`Y`G]W`Yf\`Y]hgUbdUggi`b[`i`b`hYfghfY]W`h`X`U`g
6Yk`i`ggghY]b`XYf`B`5`HC`ZØf`dchYbn]Y`Y`Y; YZU\`fYb`i`bX`X]Y
B`ch`k`YbX][`_`Y]hž`ghYhg`VYfY]h`ni`gY]b""G]W`Yf\`Y]h]gh`b]W`h`bi`f`Y]b
cdYfUh]j`Yg`N]Y`ž`gcbXYfb`Ui`W`Y]bY`5`bZcfXYfi`b[ž`i`a`YZZ`_`h]j`Y
a`]hÅf]gW`Y`9]bgÅhnY`Xi`fW`ZØ\`fYb`ni`_`ØbbYb""8]YgY
J`cf`_`Y\`fi`b[Yb`_`ØbbhYb`Ui`W`5`i`gk`]f`_i`b[Yb`Ui`Z`X]Y
Ni`gUa`a`YbUfVY]h`a`]h`UbXYfYb`B`5`HC`!`GhUUhYb`\`UVYbž`XU`Y]b
\`c\`Yg`G]W`Yf\`Y]hgb]j`YUi`YfZcfXYf`W`]ghž`i`a`YZZ]n]Ybhi`bX
_`ccfX]b]Yfhi`i`\`UbXY`b"

G]W`Yf\`Y]hga`U»bU\`a`Yb`k`]Y`X]YgY`g]bX`]b`\`c`W`gYbg]V`Yb
6YfY]W`Yb`b]W`h`gY`hYb""8Yf`9]bgUhn`j`cb`A`]hÅf`g`i`bX

Dc`nY]_fÅZhYb`nY][hž`XUgg`X]Y`B5HC`]\fY`J`YfUbhk`cfhi`b[`Yfbgh
b]a`a`hž`b]W\h`bi`f`ZØf`]\fY`Y][`YbYb`Hfi`ddYbž`gcbXYfb`Ui`W\`ZØf`X]Y
G]W\Yf\Y]h`XYf`Ni`gUa`a`YbUfVY]h`]b`XYf`]bhYfbUh]cbU`Yb
;`Ya`Y]bgW\UZh`"8]Y`I`b[`Yk`]gg\Y]hž`X]Y`gc`W\Y
G]W\Yf\Y]hga`U»`bU\`a`Yb`a`]h`g]W\`Vf]b[`Ybž`_Ubb`]b`XYf
;`YgY`gW\UZh`I`bg]W\Yf\Y]h`\Yfj`cffi`ZYbž`YXcW\`]gh`X]YgY
DfÅj`Ybhj]`ghfUhY[`]Y`ZØf`X]Y`5i`ZFYW\hYf\U`hi`b[`XYf`G]W\Yf\Y]hi`bX
XYf`VYhf]YVgVYfY]hYb`GhUhi`g`XYf`B5HC`Yb`hgW\Y]XYbX"

9]b`6`]W_`Ui`Z`X]Y`bU\`Y`Ni`_i`bZh

8]Y`9b`hk`]W_`i`b[`Yb`XYf`_ca`a`YbXYb`HU[`Y`k`YfXYb`Yb`hgW\Y]XYbX
ZØf`X]Y`G]W\Yf\Y]hg`U[`Y`]b`];`Y]`Yb_]fW\Yb`gY]b`"J]Y`Y`ZfU[`Yb`g]W\`ž
k`]Y`Ub[`Y`X]YgY`Yf\`Ò\`hYb`G]W\Yf\Y]hgj`cf`_Y\`fi`b[`Yb
Ui`ZFYW\hYf\U`hYb`k`YfXYb`a`ØggYb`"5b[`Yg]W\`hg`XYf`U`_hi`Y`Yb
6YXfc`\i`b[`g`U[`Y`k`]fX`X]Y`B5HC`k`Y]hYf\`]b`k`UW\`gUa`gY]b`i`bX
gW\`bY`"Ui`Z`bYi`Y`Zcfa`Uh]cbYb`fYU[`]YfYb`"8]Y`6YXYi`hi`b[`Y]bYf
fcVi`ghYb`G]W\Yf\Y]hg]bZfUghfi`_hi`f`V`Y]Vhi`bghf]hh[`i`bX`]gh`ZØf`X]Y
B5HC`j`cb`nYbhfU`Yf`6YXYi`hi`b[`ž`i`a`X]Y`Ubj`YfhfUi`hYb`5i`Z[`UVYb
YZZY`_hj`ni`YfZØ`Yb`i`bX`X]Y`FY[`]cb`ni`gW\`Øh`Yb`"

9f\`Ò\`hY`G]W\Yf\Y]hga`U»`bU\`a`Yb`i`bX

5i`gk`]f`_i`b[`Yb`Ui`Z`X]Y`F`Y[`]cb

8]Y`9b`hgW\Y]Xi`b[`XYf`B5HC`ž`X]Y`G]W\Yf\Y]hgghi`ZY`Ua`i`i`[`d`Uhn
;`Y]`Yb_]fW\Yb`ni`Yf\`Ò\`Ybž`\Uh`b]W\h`bi`f`5i`gk`]f`_i`b[`Yb`Ui`Z`X]Y
Xcfh`VYgW\`ÅZh][`hYb`A`]hUfVY]hYfž`gcbXYfb`Ui`W\`Ui`Z`X]Y`i`a`]Y[`YbXY
FY[`]cb`";`Y]`Yb_]fW\Yb`ž`a`]h`gY]bYf`ghfUhY[`]gW\`k`]W\h][`Yb`@U[`Y`Ub
XYf`;`fYbnY`ni`XYb`B]YXYf`UbXYbž`]gh`Y]b`VYXYi`hYbXYf`GhØhndi`b`_h
ZØf`B5HC`!C`dYfUh]cbYb`]b`9i`fcdU`"8]Y`Yf\`Ò\`hYb
G]W\Yf\Y]hga`U»`bU\`a`Yb`_`ÖbbhYb`ni`Y]bYf`j`YfghÅf`_hYb`DfÅgYbn
j`cb`G]W\Yf\Y]hg`_fÅZhYb`i`bX`9]bgUhnZU\`fnYi`[`Yb`]b`XYf`FY[`]cb
ZØ\`fYb`"

Ni`gÅh`]W\`k`]fX`Yfk`UfhYhž`XUgg`Yg`ni`6Y\`]bXYfi`b[`Yb`]a
J`Yf`_Y\`fgZi`gg`_ca`a`hž`]bgVYgcbXYfY]b`XYf`BÅ\`Y`XYg`i`i`[`d`UhnYg`
5bk`c\`bYf`_`ÖbbhYb`Ui`Z[`fi`bX`XYf`j`YfghÅf`_hYb`Dc`nY]dfÅgYbn`i`bX

Yhk U][Yf`Ni [Ub[gVYgWfAb_i b[Ybž`X]Y`ni f; Yk Å\`f`Y]ghi b[`XYf
G]WYf\Y]h`Yf[f]ZZYb`k YfXYbž`VYY]bhfÅW h][h`k YfXYb"
G]WYf\Y]hg_fY]gY`VYhcbYb`YXcWž`XUgg`X]YgY`A U» bU\ a Yb`bi f
j cfØVYf[Y\YbX`g]bX`i bX`XUfUi ZUVn]Y`Ybž`X]Y
CdYfUh]cbgZÅ\][_Y]h`XYf`B 5HC`]b`XYf`FY[]cb`b]W h`ni`[YZÅ\`fXYb"

GW i hna U» bU\ a Yb`i bX`X]Y`F c``Y`XYf
@i Zhk UZZY

5b[Yg]W hg`XYf`g]WYf\Y]hgfY`Yj UbhYb`J cfZÅ``Y`]gh`X]Y`F c``Y`XYf
@i Zhk UZZY`i bX`]bgVYgcbXYfY`XYf`5K 57G!_ VYfk UW i b[gZØ[Y`j cb
nYbhfU`Yf`6YXYi hi b["8]YgY`gdYn]Y``Yb`:`i [nYi [Y`Yfa Ø[`]WYb
b]W h`bi f`X]Y`_ VYfk UW i b[`XYg`@ ZhfUi a gž`gcbXYfb`g]bX`Ui W
YbhgWY]XYbX`ZØf`X]Y`?ccfX]bUh]cb`j cb`9]bgÅhnYb`i bX`X]Y
G]WYfghY``i b[`XYf`@ Zh\c\Y]h]bbYf\U`V`XYf`B 5HC!; YV]YhY`"

8]Y`<Ui dhUi Z[UVY`X]YgYf`GmghYa Y`VYghY`h`XUf]bž
@i Zh]Y`]bZcfa Uh]cbYb`]b`9W hnY]h`VYfY]hni ghY``Yb`i bX
`i Zh[YghØhnhY`CdYfUh]cbYb`ni`i bhYfghØhnyb`"≠f`9]bgUhn`gY]
VYgcbXYfg`k]W h][`]b`NY]hYbž`]b`XYbYb`X]Y`[Ycdc`]h]gWYb
GdUbbi b[Yb`ghY][Yb`"≠X]YgYa`?cbhYI h`VYhcbh`X]Y`B 5HC`X]Y
Bchk YbX][_Y]h]j cb`FYU_h]cbgVYfY]hgWUZh`i bX`XYb`GW i h`n]\fYf
a`]hÅf]gWYb`≠ghU`Uh]cbYbž`i a`YZZY_h]j`Ui ZdchYbn]Y``Y
6YXfc\i b[Yb`fYU[]YfYb`ni`_ØbbYb`"

≠XYb`YhnhYb`≠J\`fYb`_Ua`Yg`ja a Yf`k]YXYf`ni`GdUbbi b[Ybž`X]Y
X]Y`Bchk YbX][_Y]h`Y]bYf`ghÅbX][Yb`K UW gUa`_Y]h`i bhYfghf]WYb`"
Gc`k UfYb`a Y\`fYfY`B 5HC!GhUUhYb`a`]h`<YfUi gZcfXYfi b[Yb
_cbZfcbh]Yfhž`X]Y`j cb`7mVYfUb[f]ZZYb`V]g`\]b`ni`d\mg]gWYb
6YXfc\i b[Yb`Xi fW`i b]XYbh]Z]n]YfhY`; fi ddYb`fY]W h`Yb`"

G]WYf\Y]hgj cfZÅ``Y`i bX`ØZZYbh`]WY
K U\fbY\ a i b[

8]Y`Øb[ghYb`J cfZÅ``Yž`X]Y`ni f`9f\Ø\i b[`XYf`G]WYf\Y]hgghi ZY
ZØ\fhYbž`\UVYb`VY]`XYf`c`_U`Yb`6Yj Ø`_Yfi b[`6Ygcf[b]g`Ui g[Y`Øgh"
G]WYf\Y]hgj cfZÅ``Y`Ub`A`]hÅfghUbXcfhYb`]b`8Yi hgW`UbXž`k]Y`X]Y

a i ha U» `]WXY`GUVchU[YU_h]cb`Ua`K UggYfk Yf`XYf
@i Zhk UZZYb_UgYfbY`?`Ò`b!K U\ bž`hfU[Yb`ni`f`U``[Ya`Y]bYb
I bg]WXYf\Y]h`VY]"`8]YgY`J cfZ`Y`g]bX`HY]"`Y]bYg`[fÒ» YfYb`HfYbXgž
XYf`]b`XYb`Y`h`hYb`Y\`fYb`VYcVUW`h`h`k`i`fXY`i`bX`Ui`ZY]bY
ni`bY\`a`YbXY`6YXfc\`i`b[`Z0f`A`]]h`ÅfU`b`U[Yb`\`]bk`Y]gh"

I a`X]Y`ÒZYb`h`]WXY`G]WXYf\Y]h`ni`i`[Yk`Å\`f`Y]ghYb`i`bX`XUg
J YfhfUi`Yb`XYf`60f[Yf`k`]YXYf\Yfni`ghY``Ybž`]gh`Yg`Z0f`X]Y`6Y\`0fXYb
k`]W`h][ž`hfU`bgdUfYb`h`0VYf`X]Y`9fY][b]ggY`ni`i`_ca`a`i`b]n]YfYb`i`bX
[Y[YVYbYbZU`g`d`f`Å]`Yb]h]j`Y`A`U»`bU\`a`Yb`ni`i`Yf[fY]ZYb``8]Y
Ni`gUa`a`YbUfVY]h`nk`]gWXYb`A`]]h`Åf`i`bX`N]j`]`[YgY`gW`UZh`_0bb`hY
\]YfVY]`Y]bY`Yb`hgWXY]XYbXY`F`c`Y`gd]Y`Ybž`i`a`i`U`Y`6Y`hY]`][`hYb
0VYf`U`_hi`Y``Y`9b`hk`]W`_i`b[Yb`]b`?`Yb`b`hb]g`ni`i`gY`hnYb"

8]Y`B`5`HC`i`\`Uh]b`XYf`J`Yf[Ub[Yb\Y]h`VY`h`c`b`hž`XUgg`i`\`fY
a`]]h`Åf]gWXYb`N]Y`Y`i`bX`9]b`f]W`h`i`b[Yb`[YgW`0`h`h`k`YfXYb`a`0ggYbž
i`a`X]Y`G]WXYf\Y]h`i`\`fYf`A`]h[`]YXghUUhYb`ni`i`[Yk`Å\`f`Y]ghYb``8]Yg
YfZcfXYfhj`cb`XYb`60f[Yfb`gck`c`\`J`Yfgh`Å`b`Xb]g`U`g`Ui`W
?`ccdYfUh]cbž`]bgVYgcbXYfY`i]b`NY]hYb`Yf\`0\`hYf
G]WXYf\Y]hgj`cf`_Y\`fi`b[Yb"

8YhU]`g

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