

7 \ f]gh]b U'; ]YgY. '? UggY`g`VY[ Y]ghYfbXY  
; ÀghYZØ\ fYf]b`]a`'6Yf[ dUf\_

7 \ f]gh]b U'; ]YgYžZF]gW\`Ui`g[ YV]`XYhY'; ÀghYZØ\ fYf]bž  
VY[ Y]ghYfh'a`]h`VUff]YfYZfY]Yb`Hci`fYb`Xi`fW\`XYb`'6Yf[ dUf\_]b  
? UggY`"

? UggY`" `8Yf`6Yf[ dUf\_`K` ]\Y`a`g\Ø\Y`]b`? UggY`n]Y\h`b]W\h`bi`f`  
Hci`f]ghYb`Ubž`gcbXYfb`V]YhYh`Ui`W\`Y]bY`D`UhhZcfa`'ZØf`c`U`Y`  
5\_hYi`fYž`X]Y`]\fY`GhUXh'a`]h`6Y[ Y]ghYfi`b[`j`cfghY``Yb``9]bY`X]YgYf`  
5\_hYi`fY`]gh`7 \ f]gh]b U'; ]YgYžY]bY`Yb[ U[ ]YfhY'; ÀghYZØ\ fYf]bž`X]Y`  
]\fYb`K`Y[ `ni`a`'6Yfi`Z`Yfgh]a`':`fØ\`U\`f`X]YgYg`š\`fYg`ZUbX``5b`  
Y]bYa`'\Y`»`Yb`Gca`a`YfhU[ `9bXY`5i`[`i`gh`VY[ `Y]hYhY`g]Y`Y]bY`  
GYb]cfYb[ fi`ddY`Ui`g`XYf`@ØbYVi`f[ Yf`<Y]XY`i`bX`nY][`hY`]bYb`X]Y`  
GW\Øb\Y]hYb`XYg`6Yf[ dUf\_g"

⇒`J`cfZY`X`V]`XYhY`7 \ f]gh]b U'; ]YgY`g]W\`]a`'F`U\`a`Yb`Y]bYf`  
5i`gV]`Xi`b[ `VY]? UggY`A`Uf\_`Yh]b[ `k`Y]hYf`i`bX`\`Uh`gY]h\`Yf`]fYb`  
D`Uhn`i`bhYf`XYb'; ÀghYZØ\ fYf]b`[ YZ]`bXYb``6Y]`XYf`\`Yi`h][`Yb`  
:`Ø\`fi`b[`ž`X]Y`gdYn]Y``Ui`Z`À`hYfY'; ÀghY`ni`[`YgW\`b]hYb`]ghž`  
df`AgYb]h]Yfh`g]Y`XYb`HY]`bY\`a`Yfb`X]Y`:`UW\`hYb`XYf`ØVYf`&)`\$`š\`fY`  
U`hYb`DUf\_`Ub`U[`Y``⇒`fY`YfghY`GhUh]cb`]gh`XUg`; Yk`ÀW\`g\`Ui`g]a`  
6Yf[ dUf\_ž`k`c`X]Y'; ÀghY`a`Y\`f`ØVYf`X]Y`:`c`fU`YfZU\`fYb``; ]YgY`  
Yf`Ài`hYfhž`XUgg`X]Y`DZ`Ub`nYb`]a`a`Yf`]b`HØdZYb`V`Y]VYbž`k`Ug`]bYb`  
Y]b`\_`cbh]bi`]Yf`]W\`Yg`6`Ø\`Yb`Yfa`Ø[ `]W\`h``9]b`5i`gV]`W\_`Ui`Z`X]Y`  
@Øk`YbVi`f[ ž`YfVUi`hj`cb`K`]Y`a`'±`ž`fi`bXYh`X]Y`9]bZØ\`fi`b[ `ØVYf`  
X]YgY`VYY]bXfi`W\_`YbXY`FY[ ]cb`UV"

9]bV`]W\_`]b`X]Y`:`Ø\`fi`b[`Yb`XYf`; ÀghYZØ\ fYf]b

8]Y`:`Ø\`fi`b[`j`Yf`Ài`Zi`Xi`fW\`a`U`Yf]gW\`Y`K`Y[`Y`XYg`6Yf[ dUf\_gž`  
k`À\`fYbX`7 \ f]gh]b U[`YXi`X][`Y`XY`:`fU[`Y`VY`Ubhk`cfhYh`C`Zi`V`Y]Vh`

g]Y`ghY\Ybž'i a`XYb` ; ÅghYb`X]Y`gd`YbX]XY`5i gg]W\h`Ui Z`X]Y  
l a [ YVi b[ `ni`nY][ Yb" 9g`]gh`Y]bZUW`Y]b`hc`Yf`C`fh" `A Y]bY  
@]YV`]b[ gghY`Y`]gh`XUg`5ei ÅXi \_h žYfnÅ`h`g]Y" 8 UVY]`]gh`Yg`b]W\h  
bi f`XUg`K ]ggYb`i a`X]Y`GY\Ybgk ØfX][ \_Y]hYbž`XUg` ; ]YgY  
Ui ga UW\hž`gcbXYfb`Ui W\`]\fY`Ub[ YbY\`a Y`Gh]a a Yž`X]Y`XUg  
Di V`\_i a`Ub`gd]W\h"

7`f]gh]bU` ; ]YgY`a Y]ghYfh`X]Y`<YfUi gZcfXYfi b[ Yb`]\fYf`F`c`Y`a ]h  
6fUj ci f" `K Å`fYbX`g]Y`X]Y` ; fi ddY`Ub`XYb` : cbhÅbYb`hY]W\`ZØ`fhž  
a i gg`g]Y`]a d`fcj ]g]YfYbž`XU`X]Y` [ fc»Y` : cbhÅbY`bcW\`b]W\h`U`\_hj  
]gh" `À`fY` : Å`][ \_Y]hž`ZYI ]VY`Ui Z`X]Y`6YXØfZb]ggY`XYf` ; fi ddY  
Y]bni [ Y\Ybž`Yfa Ø[ `]W\h`Yg`]\fž`X]Y`HY]`bY\`a Yf`b]W\h`bi f`ØVYf`X]Y  
GY\Ybgk ØfX][ \_Y]hYb`ni`]bZcfa ]YfYbž`gcbXYfb`Ui W\`]b`X]Y  
 ; YgW\]W\hY`XYf`GhUXh`Y]bni hUi W\Yb" `A Ub`a i gg`]a a Yf`U`Y  
HY]`bY\`a Yf`[ i h]a`6`]W`VY\U`hYb ž`VYhc`bh`g]Yž`k Å`fYbX`X]Y  
 ; fi ddY`g]W\`]a`DUF`\_`nYfghfYi hi bX`Y]b][ Y` ; ÅghY`VY[ Y]ghYfh` : chc`g  
gW\]Y»Yb"

9]bY`]b`hYfYggUb`hY`5bY`\_X`chYž`X]Y` ; ]YgY`a ]h`XYb`HY]`bY\`a Yfb`hY]`hž  
\UbXY`h]`cb`Y]bYf` : fU[ Y`Y]bYg`j Yf[ Ub[ YbYb` ; UghYg.` CV`Yg`Ui Z  
XYa`<Yf`\_i`Yg`Y]bYb`6`]hnUV`Y]hYf`[ ]Vh" `8]YgY`BYi [ ]YfXY`]\fYf  
Ni \ØfYf`]gh`Ygž`X]Y`7`f]gh]bU`a`ch]j ]Yfhž`]\f`K ]ggYb`ghÅbX][ `ni  
Yfk Y]hYfb" `X`hnh`k`Y]»`]W\.`]ž`hUhgÅW\`]W\`[ ]Vh`Yg`Ui Z`XYf`GhUhi Y  
Y]bYb`6`]hnUV`Y]hYf`ž`hY]`h`g]Y`a ]h`Y]bYa`@ÅW\Y`b`a ]h"

## 9]b`6Yfi Z`j c`Yf`5V`k YW\`g`i b[

8]Y` ; ÅghY`ZØ`fYf]b`n]YhYfhž`XUgg`]\fY`UfVY]hYbXYb` ; fi ddYb`gc  
j ]Y`ZÅ`h][ `g]bXž`k ]Y`X]Y`GhUXh`gY`Vgh" ]cb`GYb]cfYb[ fi ddYb`ØVYf  
Ghi X]YfYbXY`V]g`\]b`ni` : Ua`]Y]b`i bX` : fYi bXgW\UZhYb` `YXY`Hci f  
Vf]b[ h`bYi Y` ; Yg]W\hYf`i bX` ; YgW\]W\hYb`a ]h`g]W\`" ; ]YgY`ZØ`fh]`fY  
 : Ø`fi b[ Yb`b]W\h`bi f`Ui Z`8Yi hgW\ž`gcbXYfb`Ui W\`Ui Z`9b[ `]gW\`i bX  
]dUb]gW\`Xi fW\ž`k Ug`X]Y`\_i`hi fY`Y`6fØW`\_`nk ]gW\Yb`XYb  
j YfgW\]YXYbYb` ; ÅghYb`ghÅf`\_h"

A ]h`HfUi VYbni W`\_Yf`i bX`]\fYa`G`\_]d`h]b`XYf`HUgW\Y`]gh`g]Y`ghYhg  
XUfUi Z`j c`fVYfY]hYhž`X]Y` ; fi ddY`]a`B`chZU`g`W\`bY`ni  
i b`hYfghØ`hnYb" 8]Yg`nY][ h`]\f`9b[ U[ Ya`Yb`h`i bX`]\fY`K`Y]hg]W\hž`X]Y

Zøf`X]YgYb`6Yfi Zi bYf`Àgg`jW`g]bX"8]Y`Hci f`YbXYh`Ua`Gw`cgg  
K ]`Y`a g\Ò\Yž`k c`g]W`XUg`Di V`\_]i a`a ]higdcbhUbYa`5dd`Ui g  
VYXUb`h"; ]YgY`b]a a h`XUg`dcg]hj Y: YYXVUW`a ]hi bX`fYZY`h]Yfhž  
k ]Y`k ]W`h[ `F ci h]bY`Zøf`\fY`F c`Y`]ghž`k Ug`g]Y`a ]h`YXYf`; fi ddY  
a Y`f`Yf`Ub[ h"

8Yf`9]bXfi W`ž`XYb`7`f]gh]bU; ]YgY`VY`]`fYb; ÀghYb`\]bhYf`Àgghž  
]ghi bVYghf]hhYb`dcg]hj " `F cVYfh`<c`a Ubž`XYf`X]Y`GYb]cfYbfY]gY  
cf[ Ub]g]Yfh`\Uhž`\YVh`\Yfj cfž`k ]Y`ni b`W`gh`nÒ[ Yf`]W`X]Y; fi ddY  
XYf`?i`hi ffY]gY`[ Y[ YbØVYf`k Uf" `5`g`]W`?UggY`U`g`N]Y`  
j cf[ YgW`U[ Yb`\UVYž`k c`h`Y`Yfgh`\_Y]bYf`a ]hZU`fYb" `>hnh`g]bX`UVYf  
U`Y`Zfc`ž`XUgg`k ]f`\Yf[ Y`ca a Yb`g]bX`i bX`i bg`X]YgY  
]bhYfYggUbhY`GhUXh`Ub[ i W`Yb" `8]Yg`gdf]W`h`Zøf`X]Y: À\][`\_Y]hYb  
i bX`X]Y`@Y]XYbgW`UZhj cb`7`f]gh]bU; ]YgYž`X]Y`g]Y`YfZc`[ fY]W`Ub  
]\fY; ÀghY`k Y]hYf[ ]Vh"

8Yf`6Yf[ dUf`\_K ]`Y`a g\Ò\Y`]b`?UggY`[ Y`]b[ h`Ygž`A YbgW`Yb  
ni gUa a Ybni Vf]b[ Yb`i bX; YgW`]W`hY`YVYbX][`k YfXYb`ni`UggYb  
`Y]b`N]Y`ž`XUg`7`f]gh]bU; ]YgY`U`g; ÀghY`Zø`fYf]b`a ]h] ]Y`  
9bh`i g]Uga i g`i bX`9b[ U[ Ya Ybh`YffY]W`h"

8YhU]`g

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