

K U`X\cZ`A Ubb\Y]a `ØVYfnYi [ h`]a  
HYghgd]Y` `[ Y[ Yb`A c`YbVYY\_`a ]h`&.\$!G]Y[

GJ`K U`X\cZ`A Ubb\Y]a `[ Yk ]bbh`&.\$`[ Y[ Yb`FK 8`A c`YbVYY\_  
]b`XYf`; YbYfU`dfcVY`"HfU]bYf`5bhk YfdYb`cVh`X]Y`@Y]ghi b[  
j cf`XYa `@[ U!GhUfh`

8 Ug`YhnhY`HYghgd]Y`XYg`GJ`K U`X\cZ`A Ubb\Y]a `j cf`XYa  
UbgY\YbXYb`8f]h`][ U!GhUfh`VfUW`hY`b]W`h`bi`f`Y]bYb`G]Y[ ž  
gcbXYfb`Ui`W`]bhYfYggUbhY`9]bV`]W\_Y`]b`X]Y`Gd]Y`k`Y]gY`XYf  
A UbbgW`UZh`8Yf`&.\$!9fZc`[ `[ Y[ Yb`XYb`VY`[ ]gW`Yb`Nk`Y]h`][ ]ghYb  
FK 8`A c`YbVYY\_`ZUbX`]a `7Uf`!6Ybn!GhUX]cb`ghUhh`i`bX`k`i`fXY`j`cb  
&"\*(` `Ni`gW`Ui`Yfb`j`YfZc`[ h`8]YgY`6Y[ Y[ bi`b[ ]gh`VYgcbXYfg  
g][ b]Z]\_Ubhž`XU`g]Y`U`g`U`[ Ya`Y]bY`; YbYfU`dfcVY`ZØf`X]Y  
VYj`cfghY\YbXYb`<YfUi`gZcfXYfi`b[ Yb`]b`XYf`@[ U`[ ]h`i`bX`nY][ hž  
k ]Y`g]W`X]Y`A UbbgW`UZh`i`bhYf`XYa `8fi`W\_Y]bYf`YfbghYb  
Gd]Y`i`a`[ YVi`b[ ]Yf`Å`h`

### Dcg]h]j`Y`6]`Ubn`XYg`HfU]bYfg

A UfW`5bhk YfdYbž`XYf`HfU]bYf`XYg`GJ`K U`X\cZ`VYk`YfhYhY`X]Y  
@Y]ghi`b[ ]gY]bYf`A UbbgW`UZh`bUW`XYa `Gd]Y`U`g`cfXYbh`]W`"  
6YgcbXYfg]b`XYf`YfghYb`<U`VnY]h`\UhY`XUg`HYUa  
GW`k ]Yf][ \_Y]hYbž`cZZYbg]j`8fi`W`Ui`Zni`VUi`Yb`"8cW`XYf  
: Ø\fi`b[ ghfYZZYf`j`cb`HYffYbW`6cmX`\_i`fn`bUW`XYf`<U`VnY]hdUi`gY  
\U`Z`XUg`Gd]Y`XYi`h`]W`ni`j`YfÅbXYfb`"8]YgY`9bhk`]W`i`b[  
i`bhYfghfY]W`h`X]Y`: Å\][ \_Y]h`XYf`A UbbgW`UZh`ž]b`gW`k ]Yf][ Yb  
G]hi`Uh]cbYb`ni`k`UW`gYb`i`bX`g]W`Ub`]fY`GhfUhy[ ]Yb`Ubni`dUggYb`

### HYW`b]gW`Y`5gdY`\_hY`XYg`Gd]Y`g

8 Ug`HYUa `hfUh]b`Y]bYa `( !&!` !%GmghYa `Ubž`k Ug`ZØf`X]Y

Ni gW Ui Yf`Y]bY`]bhYfYggUbhY`hU\_h]gWY`5i gf]W hi b[ `Vch"9]b `XYf  
VY]XYb` GYW gYf` `5Xf]Ub` : Y]b`cXYf`A UI ]a` ]]Ub`H\U`Ua` a Yf`  
nc[ `g]W`cZh`ni f0W\_ž`i a` Y]bY`8fY]Yf\_YhhY`]a` Gd]Y`Ui ZVUi`ni  
V]`XYb"5i Z[ fi bX`j`cb`J Yf`Yhni b[ Yb`a`i gghYb`j`YfgW]YXYbY  
Gd]Y`Yf`]a`dfcj`g]YfYbž`k Ug`nY][ Yb`\_ÖbbhYž`XUgg`X]Y`A`UbbgW`UZh  
Ui W`]b`?f]gYbg]hi`Uh]cbYb`ghUV]`V`Y]Vh"8]YgY` : `YI`J]`]h`h`\_Ubb  
g]W`U`g`YbhgW`Y]XYbX`YfUi`gghY`Ybž`k`Ybb`a`Ub`X]Y`j`Uf]]YfhYb  
5bZcfXYfi`b[ Yb`k`Ä`fYbX`XYf`GU]gcb`]b`6YhfUW`h`n]Y`h`

< YZh][ Y`5i`gY]bUbXYfgYhni`b[ `i`bX`XYggYb  
: c`[ Yb

⇒ J`Yf`Ui`Z`XYg`Gd]Y`g`\_Ua`Y`g`ni`]bhYbg]j`Ya`?`ÖfdYf`\_cbhU`\_hž`k`Ug  
gW`]Y`»`]W`ni`Y]bYf`F`chYb`?`UfhY`Z0f`A`c`YbVYY`\_g`D]chf`DUfnmgnY`\_  
Z0`fhY"8]YgYg`9fY][ b]g`ghY`hY`Y]bYb`K`YbXYdi`b`h]b`XYf  
6Y[ Y[ bi`b[ `XUfž`XU`Yg`X]Y`8`mbUa`\_]`i`bX`XYb` : `ck`XYg`Gd]Y`g  
j`Yf`Ä`b`XYfhY"5b`hk`YfdYb`Äi`»`YfhYž`XUgg`Yf`]YVYf`]b`Y]bYf`ZU]fYb  
K`YhhVYk`YfVgg]hi`Uh]cb`c`bY`gc`W`Y`J`cfZÄ`Y`k`Y]hYf[ Ygd]Y`h`Ä`hhY"  
Gc`W`Y`5i`gY]bUbXYfgYhni`b[ Yb`]a`J`cfZ`X`Y]bY`GU]gcb`\_ÖbbYb  
YXcW`X]Y`HYUa`W`Ya`]Y`i`bX`X]Y`6YfY]hgW`UZh`ni`\_Äa`dZYbž  
gck`c`VY]`XYb`Gd]Y`Yfb`U`g`Ui`W`VY]`XYb` :`Ub`gž`ghÄf`\_Yb"

9]b`6`]W`\_`Ui`Z`X]Y`b`Ä`W`ghY`GU]gcb

: 0f`XYb`GJ`K`U`X`c`ZA`Ubb`Y]a`k`]fX`X]Y`\_ca`a`YbXY`GU]gcb  
YbhgW`Y]XYbX`gY]b"8Yf`8f]hh][ U!5i`ZhU`\_h[ Y[ Yb`XYb` :`7`⇒b[ c`ghUXh  
Ua`(`"5i`[ i`gh`k`]fX`nY][ Ybž`cV`X]Y`A`UbbgW`UZh`X]Y` :`cfhgW`f]hhY`Ui`g  
XYb`HYghgd]Y`Yb`i`a`gYhnYb`\_Ubb"5b`hk`YfdYbg`J`cfZfYi`XYž`[ YdUUfh  
a`]h`XYa`G`Y`VghVYk`i`gghY]b`Ui`g`XYa`HYghgd]Y`g]Y[ ž`k`]fX`X]Y  
9fk`Ufhi`b[ Yb`c`W`U`hYb"9g`V`Y]Vh`UVni`k`UfhYbž`cV`X]YgY`dcg]h]j`Y  
9b`hk`]W`\_i`b[ `Ui`W`[ Y[ Yb`ghÄf`\_YfY` ;`Y[ bYf`6YghUbX`U`h"

K`]W`h][ Y`9f`\_`Yb`b`hb]ggY`Z0f`X]Y` ;`Ya`Y]bgW`UZh

8Ug`HYghgd]Y`k`Uf`a`Y`f`U`g`bi`f`Y]bY`gdcfh]W`Y`J`YfUbghU`hi`b[ /Yg  
ghY`hY`Ui`W`Y]bY` ;`Y`Y[ Yb`Y]h`XUfž`X]Y`Yb[ Yf`k`YfXYbXY`6]bXi`b[  
nk`]gW`Yb`XYa`J`YfY]b`i`bX`gY]bYf` :`Ub[ Ya`Y]bXY`ni`Z0fXYfb`A`]h

XYf\c\Yb`Ni gWUi YfnU\`i bX`XYf`6YhY`][ i b[ `Ub`XYf  
I bhYfghØhni b[ `XYf`A UbbgWUZh`nY][ h`X]Y`; Ya`Y]bgWUZh`XUgg`g]Y  
VYfY]h`]ghž`XYb`J YfY]b`Ui Z`gY]bYa`K`Y[ `ni`VY[ `Y]hYb``8]Y  
⇒Ybh]Z\_Uh]cb`a`]h`XYa`HYUa`k`]fX`ZØf`XYb`GU]gcbj`Yf`Ui Zj`cb  
[ fc»Yf`6YXYi hi b[ `gY]b"

## 5 VgW`]Y» YbXY`; YXUb`\_Yb

⇒g[ YgUa`h`\_Ubb`XYf`GJ`K`U`X\cZ`A`Ubb`Y]a`Ui`Z]Y]bY`[ Y`i`b[ YbY  
; YbYfU`dfcVY`ni`fØW\_V`]W\_Ybž`X]Y`b]W`h`bi`f`ZØf`X]Y`A`UbbgWUZh  
k`]W`h][ `k`Ufž`gcbXYfb`Ui`W`ZØf`X]Y`[ YgUa`hY`; Ya`Y]bgWUZh`9g`[ `]`h  
bi`bž`X]YgYb`d`cg]h]j`Yb`GW`k`i`b[ `]b`X]Y`bYi`Y`GU]gcb`a`]hni`bY`a`Yb  
i`bX`g]W`XYf`<`YfUi`gZcfXYfi`b[ `]a`8f]h`][ U!Gd]Y`VYhf]YV`ni  
ghY`Yb"

· B5;

8YhU]`g

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