

9fZc`[ `XYf'5 [ f]!D\chcj c`hU]\_. `BYi Y  
5b`U[ Y`]b`CVYf\_]fW!Bi ggVUW`YfÒZZbYh

9fZU\ fYb`G]Yžk ]Y`X]Y` A cXY`fY[ ]cb`5 [ f]!D\chcj c`hU]\_  
6UXYb!K ØfhYa VYf[ `GmbYf[ ]Yb`nk ]gWYb`@UbXk ]fhgW UZh  
i bX`Gc`Ufghfca bi hni b[ `gW UZh" `BYi YghY`9f[ YVb]ggY`nY][ Yb  
j ]Y`j YfgdFYWYbXY` : cfhgW f]hhY`

9]b`GW f]hh`]b`X]Y`Ni \_i bZh`XYf`bUW \ U`h][ Yb  
@UbXk ]fhgW UZh

8]Y`i b]j Yfg]h`hij cb`@cg`5b[ Y`Yg`fi 7@5E`\Uh`\_Øfn`]W`VYXYi hYbXY  
: cfhgW f]hhY`]b`XYf` : cfGWi b[ `ni f`bUW \ U`h][ Yb`@UbXk ]fhgW UZh  
i bX`YfbYi YfVUfYb`9bYf[ ]Yb`VY`\_Ubbh[ Y[ YVYb"8]YgY  
9bhk ]W`i b[ Yb`n]Y`Yb`XUfUi ZUVžX]Y`XcddY`hYb`Bi hni b[ Yb`j cb  
: `AWYb`ni `ZØfXYfb`i bX`X]Y`< YfUi gZcfXYfi b[ Yb`XYg  
?`]a Uk UbXY`g`Ubni [ Y`Yb"6YgcbXYfg`VYa Yf`Yb`gk Yfh]gh`XUg  
Dfc`Y`\_h` A cXY`fY[ ]cb`5 [ f]!D\chcj c`hU]\_`ZØf`6UXYb!  
K ØfhYa VYf[ `žXUg`gY]h`gY]bYf`9]bk Y]\i b[ `VY`]@UbXk ]fhYb`i bX  
l a k`Y`hgW ØhYfb`Ui Z[ fc» Yg`ϕhYfYggY`ghØ» h"

Dcg]h]j Y`5i gk ]f`\_i b[ Yb`Ui Z`X]Y  
5 [ fUfk ]fhgW UZh

⇒ F U\ a Yb`X]YgYf`ϕ]h]Uh]j Y`k ]fX`X]Y`?ca V]bUh]cb`Ui g  
`UbXk ]fhgW UZh]WYf`DfcXi \_h]cb`i bX`Gc`Ufghfca YfnYi [ i b[  
i bhYfgi W`h"9]b`\_cb`\_fYhYf`9fZc`[ `XYg`Dfc`Y`\_hYg`nY][ h]g]W`Ui Z`XYa  
C Vgh\cZJc`a Yf`]b`CVYf\_]fW!Bi ggVUW žk c`X]Y`bYi YghY`5 [ f]!  
D\chcj c`hU]\_!5b`U[ Y`Y]b[ Yk Y]\h`k i fXY"8]YgY`]bbc] Uh]j Y`HYW b]\_  
bi hnh`X]Y`J cfhY`]Y`j cb`Gc`UfYbYf[ ]Yžk `A\ fYbX`[ `Y]W`nY]h][ `C Vgh  
k ]Y`? ]k ]ž`Y`dZY`i bX`6]fbYb`Ub[ YdZUbnh`k YfXYb"9]bY`XYf  
nYbhfU`Yb`9f`\_Ybbhb]ggY`X]YgYf`6Ya Ø\i b[ Yb`]ghž`XUgg`X]Y

hY]k Y]gYb`GWUhh]Yfi b[ Yb`Xi fW`X]Y`DJ!A cXi`Y`X]Y  
DZUbnYbYb`hk ]W`i b[ `ZØfXYfb`\_ØbbYb"

## 9f[ YVb]ggY`XYf`V]g\ Yf][ Yb` : c f g W i b [

⇒a`nk Y]`>U\ fY`Ui ZYbXYb` : c f g W i b [ g d f c n Y g g`Ui ZY]bYf`YfghYb`5 [ f]!  
DJ!5b`U[ Y`]b`? fYggVfcb`Ua`6cXYbgYY`\_cbbhYb`g][ b]Z]\_UbhY  
9]bgdUfi b[ Yb`Xc`\_i a`Ybh]Yfh`k YfXYb`"Gc`k i fXY`XYf`9]bgUhn`j cb  
DZUbnYbgW`i hna`]hY`b`i a`+ \$i`j Yff]b[ Yfh`k Å\ fYbX`XYf  
6Yk ÅggYfi b[ gVYXUfZi a` ) \$i` [ YgYb`\_h`k YfXYb`\_cbbhY`"9]bY  
XYhU]`YfhY`5b`U`mgY`nY][ h`Ui W`ž`XUgg`X]Y`5b`U[ Y`ØVYf`&\$i`a`Y\ f  
Ghfca`YfnYi [ h`U`g`i fgd fØb[ `]W`d f c [ b c g h]n]Yfh`< ]YfVY]`gd]Y`Yb  
: U`\_hcfYb`k ]Y`j YfXi bghi b[ g`Ø`i b[ `i bX`< ]bhYf`ØZi b[ `Y]bY  
YbhgW`Y]XYbXY`F c`Yž`X]Y`X]YgY`Yf\ Ø\ hYb`Ghfca`YfhfÅ[ Y  
Yfa`Ø[ `]W`Yb"

## ⇒b b c j Uh]j Y`HYW`bc`c [ ]Yb`]a`9]bgUhn

8]Y`]b`C VYf\_]fW`!Bi ggVUW`Yff]W`hYhY`5b`U[ Y`VYghY`h`Ui`g`j ]Yf  
<Ui dh`ca`dcbYbhYb`"BYVYb`XYb`ZYgh`a`cbh]YfhYb`DJ!A cXi`Yb`[ ]Vh  
Yg`Y]b`gdYn]Y`Yb`hk ]W`Y`hYg`bUW` [ YZØ\ fhYg`GmghYa`"@UbXk`]fh`8f"  
<Ubg`Øf[ `j c`a`Yf`YVh`Yfj`cfž`XUgg`X]Y`bUW` [ YZØ\ fhY`5bcfXbi b[  
XYf`A cXi`Y`]b`nk Y]`? UhY[ cf]Yb`i bhYfhY]`h`k i fXY`"9]bY`< Å`Zh`k ]fX  
dZUbnYbd`mg]c`c [ ]gW` [ YghYi`Yfh`k Å\ fYbX`X]Y`UbXYfY`Ui`Z`XYf  
cdh]a`U`Yb`5i`gf]W`hi b[ `ni`f`GcbbY`VUg]Yfh`"8]YgY`X]ZYfYbn]YfhY  
<YfUb[ Y`Yb`gk Y]gY`\_ØbbhY`YbhgW`Y]XYbX`ZØf`ni`\_ØbZh][ Y  
9bhk ]W`i b[ Yb`]a`6YfY]W`XYf`5 [ f]!DJ!HYW`bc`c [ ]Y`gY]b"

## 5i gk ]f`\_i b[ Yb`Ui Z`X]Y`l a`k Y`h`i bX`\_ØbZh][ Y Bi hni b [

8 Ug`Dfc`Y`\_h`k ]fX`j cb`XYb`@UbXYga`]b]ghYf]Yb`[ YZØfXYfh`i bX`gc`  
V]g`9bXY`&\$&( `UV[ YgW`c`ggYb`gY]b`"A ]h`bYi`b`D]`chghUbXcfhYb`k ]fX  
XUg`?cbgcfh]i a`ghfUhY[ ]gW`Y`5bk YbXi b[ gZY`XYf`i bX  
HYW`bc`c [ ]Yb`Yj`U`i ]YfYb`"8Yf` : c`\_i`g`Y[ h`Ui Z`XYf`9fa`]h`i b[ `XYf  
VYghYb`A`Yh`cXYb`ni`f`[ `Y]W`nY]h][ Yb`Bi hni b[ `j`cb`5 [ fUf`UbX`i bX  
Gc`UfYbYf[ ]Yž`k Ug`Y`h`h]W`Y]bYb`d`cg]h]j Yb`9]bZi`gg`Ui`Z`X]Y`c`U`Y

i bX`fY[ ]cbU`Y`K ]fhgW\UZh`UVYb`\_ÒbbhY`i bX`U`g`J cfV]`X`ZØf  
UbXYfY`FY[ ]cbYb`X]YbYb`\_Ubb"

9g`V`Y]Vh`UVni k UfhYbž`]bk ]YZYfb`X]Y`9f[ YVb]ggY`X]YgYg`Dfc`Y`\_hYg  
X]Y`\_UbXk ]fhgW\UZh`W\Yb`DfU`h]\_Yb`]b`8`Yi hgW\`UbX`i bX`XUfØVYf  
\]bUi g`fYj c`i h]cb]YfYb`\_ÒbbYb``8]Y`GmbYf[ ]YYZY`\_hY`XYf  
XcddY`hYb`:`ÀW\Ybbi hni b[ `g]bX`j ]Y`j YfgdfYW\YbX`i bX`\_ÒbbhYb  
Y]b`k ]W\h][ Yf`GW\ f]hh`Ui Z`XYa`K`Y[ `ni`Y]bYf`bUW\`U`h][ YfYb  
@UbXk ]fhgW\UZh`gY]b"

8YhU]`g

6Ygi W\Yb`G]Y`i bg`Ui Z.`X]Y!bUW\ f]W\hYb`"bYh