

6GF . 'F YWmW]b[\ ÖZY 'Ua 'DZ]b[gha c b hU[[YgW\`cggYb

8 Ug'6Yn]f_gUa hi]bZcfa]Yfh'i]b'6Yni ['Ui ZX]Y
DfYggYa]hY]i b['XYf'6Yf']bYf'GhUXhfY]b][i b['f6GF Ł'ØVYf'X]Y
GW\`Y»i b['XYf'F YWmW]b[\ ÖZY'i bX
5VZU`VY\UbX'i b[gUb`U[Yb'Ua 'DZ]b[gha c b hU["5i Z[fi bX
XYg[YgYhn`]W\Yb : Y]YfhU[g'j YfgW\]YVYb'g]W\`X]Y
5VZ \fhYfa]bY'ZØf'F YghUVZU`!ž'6]c[i h'i bX'K Yfhghc Zhc b b Yb
i a 'Y]bYb'HU['bUW\`]b hYb"5i W\`X]Y @YYfi b[Yb'XYf
5VZU`VY\`hYf'a]h'XYa 'fY[i `ÅfYb'5VZ \fhYfa]b'Ua '&\$"A U]
fDZ]b[gha c b hU[Ł'Z]bXYb'Yfgh'Ua '&%"A U]'fB]YbghU[Ł'ghUhh"
8]Y'F YWmW]b[\ ÖZY'gck]Y'X]Y'A YW\Ub]gW\Yb
6Y\UbX'i b[gUb`U[Yb'; fUXYghfU»Y'i bX'XUg
A Ø`Y]n_fUZhk Yf_'Fi \`YVYb'g]bX'Ua 'DZ]b[gha c b hU[
[YgW\`cggYb"@_U'Y'5i gk]f_i b[Yb'_ØbbhYb'gY]bž'XUgg
6Øf[Yf]bbYb'i bX'6Øf[Yf']\fY'5VZ`Y'YbhgdFYW\YbX'XYf
j YfgW\cVYbYb'HYfa]bY'VYfY]hghY`Yb'a ØggYbž'i a
g]W\Yfni ghY`Ybž'XUgg'g]Y'cfXbi b[g[Ya Å» 'Ybhgc f[h'k YfXYb"
9g']gh'k]W\h][ž/ Ua d^Y`]d/



8 Ug'6Yn]f_gUa h']bZcfa]Yfh]b'6Yni ['Ui ZX]Y'DfYggYa]hhY]'i b['XYf
6Yf']bYf'GhUXhfY]b][i b['f6GF Ł'ØVYf'X]Y'GWŁ']Y» i b['XYf
FYWmW]b[\ÖZY'i bX'5VZU''VY\UbX'i b[gUb`U[Yb`Ua
DZ]b[gha cbhU[" '5i Z[fi bX'XYg['YgYhm`]WYb': Y]YfhU[g] YfgWŁ]YVYb
g]WŁ'X]Y'5VZ' \fhYfa]bY'ZØf'FYghUVZU`!ž'6]c[i h'i bX
K YfhgchcZzhcbbYb'i a 'Y]bYb`HU['bUWŁ' \]bhYb" '5i WŁ'X]Y'@YYfi b[Yb
XYf'5VZU''VY\À'hYf'a]h'XYa 'fY[i 'ÀfYb'5VZ' \fhYfa]b`Ua '&\$" 'A U]
fDZ]b[gha cbhU[Ł'Z]bXYb'Yfgh'Ua '&%' 'A U]fB]YbghU[Ł'ghUhh'"8]Y
FYWmW]b[\ÖZY'gck]Y'X]Y'A YWŁUb]gWŁYb'6Y\UbX'i b[gUb`U[Yb
; fUXYghfU»Y'i bX'XUg'A Ø``\Y]n_fUZhk Yf_'Fi '\`YVYb'g]bX'Ua
DZ]b[gha cbhU['[YgWŁ'cggYb"

@c_UY'5i gk]f_i b[Yb`_ÖbbhYb'gY]bžXUgg'6Øf[Yf]bbYb'i bX
6Øf[Yf'\fY'5VZÀ''Y'YbhgdFYWŁYbX'XYf'j YfgWŁcVYbYb`HYfa]bY
VYfY]hghY''Yb'a ØggYbž'i a 'g]WŁYfni ghY''Ybž'XUgg'g]Y
cfXbi b[g[Ya À» 'Ybhgc f[hik YfXYb" '9g]ghk]WŁh][ž'XUgg'X]Y
6Yj Ö`_Yfi b['ØVYf'gc'WŁY'YbXYfi b[Yb']bZcfa]Yfh]ghž'i a

J YfnÒ[Yfi b[Yb`cXYf`DfcV`Ya Y`VY]`XYf`A Ø`Ybhgc f[i b[`ni
j Yfa Y]XYb"

<]ghc f]gW` [YgY\Yb`]gh`Yg`ØV`]W ž`XUgg`Ub` [YgYhn`]W`Yb` : Y]YfhU[Yb
X]Y`A Ø`UVZ \fhYfa]bY`j YfgW`cVYb`k YfXYbž`i a`XYb`5fVY]hYfb`XYf
GhUXhfY]b][i b[`YVYbZU`g`X]Y`A Ø[`]W`_Y]h`ni` [YVYbž`X]Y` : Y]YfhU[Y
ni` [Yb]Y»Yb"

⇒ XYf`Zc` [YbXYb`HUVY`Y`g]bX`X]Y`j YfgW`cVYbYb
A Ø`UVZ \fhYfa]bY`ZØf`X]Y`_ca a YbXY`K`cW`Y`Ui Z[YZØ\fh.

p5VZ \fUfh`pFY [i`ÀfYf`HYfa]b`pJ YfgW`cVYbYf`HYfa]b`p
p p p p
pFYghUVZU`p&\$`A U]`p&%`A U]`p
p6]c [i`h`p&\$`A U]`p&%`A U]`p
pK YfhghcZhc`bbYb`p&\$`A U]`p&%`A U]`p

9g]gh`k]W`h[ž`XUgg`X]Y`6Øf[Yf]bbYb`i bX`6Øf[Yf`j cb`6Yf`b`X]YgY
⇒ Zcfa`Uh]cbYb`VYUW`hYbž`i a`g]W`Yfni`ghY`Ybž`XUgg`]\fY`5VZ`Y
cfXbi b[g[Ya`À»`Ybhgc f[h`k YfXYb`i bX`Yg`b]W`h`ni` J YfnÒ[Yfi b[Yb
_ca a`h"

E i Y`Y. k k k "VYf`]b"XY

8YhU]`g

6Ygi`W`Yb`G]Y`i`bg`Ui`Z.`a`Y]b!VYf`]b"bYh