: Yfbk Àfa Yj Yfgcf[i b[']b ; YZU\ f. ' ? f]h]_
Ub ' ? Øfni b[Yb ']a ' ? H: ' i bX ' bYi Yb
F Y[Y ' i b[Yb

? Øfni b[Yb ']a ' ? H: ' [YZÀ\ fXYb ' XYb ' 5i gVUi ' XYf
: Yfbk Àfa Yj Yfgcf[i b[" HfUbgdUfYbn' i bX
J YfVfUi WXYfgW i hn' ghY\ Yb ']a ' : c_ i g ' U_ hi Y ' Yf ' 8 YVUhYb "

5a ' &&"5i [i gh' &\$&(' gc f[hYb ' X]Y ' _Øfn']W ' Ub[Y_ØbX][hYb
? Øfni b[Yb ' VY]a ' ? ']a U! ' i bX ' HfUbgZcfa Uh]cbgZcbXg' f? H: Ł' ZØf
8]g_ i gg]cbYb ']b ' XYf ' 6fUbWXY " ' 8 Yf ' J YfVUbX ' ? ca a i bU ' Yf
I bhYfbY\ a Yb ' fU ? I Ł' Ài » YfhY ' 6YXYb _Yb ' ØVYf ' X]Y ' Z]bUbn]Y ' Yb
A]hhY ' žX]Y ' ZØf ' XYb ' 5i gVUi ' XYf : Yfbk Àfa Yj Yfgcf[i b[' Y]b[Yd ' Ubh
g]bX " ' Bi ' fi bX ' ' ž(' A] ']UfXYb ' 9i fc ' gc ' Yb ' j cb ' &\$&) ' V]g ' &\$&-
VYfY]hghY\ Yb žk À\ fYbX ' ' Ui h' Y]bYf ' Ghi X]Y ' XYg
9bYf[]YYZ]n]Ybnj YfVUbXg ' ZØf ' K Àfa Yž? À ' hY ' i bX ' ? K ? ' fB ; : K Ł' XYf
hUhgÀW ']WY ' ' À\ f']WY : ØfXYfVYXUfZVYfY]hg ' VY] ' ž(' A] ']UfXYb
9i fc ']Y[h "

8]Y ' Dfc[bcg ' 5; žX]Y ' XUg ; i hUW hYb ' YfghY ' ' h ' \ Uhž ' nY][h' Ui Zž ' XUgg
V]g ' &\$ ' \$ ']bg[YgUa h(' ' ž ' A] ']UfXYb ' 9i fc ']b ' XYb ' 5i gVUi ' i bX
I a VUi ' XYf : Yfbk Àfa Y ']bj Ygh]Yfh' k YfXYb ' a ØgghYbž ' i a ' X]Y
Ua V]h]cbgfY]WYb ' N]Y ' Y ' XYf ' 6i bXYgfY[]Yfi b[' ni ' YffY]WYb " ' J ? I !
< Ui dh[YgWÀZhgzØ\ fYf ' ð[VYfh' @]YV]b[' VYhc b hYž ' XUgg ' a]h' X]YgYf
A]hhY ' Ui gghUhi b[' XUg ' Yf_ ' ÀfhY ' N]Y ' ž ' XYb ' 5b hY] ' XYf : Yfbk Àfa Y
V]g ' &\$ () ' ni ' j YfXfY]ZUWYbž ' b]WYh' ni ' YffY]WYb ' gY] "

F Y[i ']Yfi b[Yb ' i bX ' J YfVfUi WXYfgW i hn ']a
: c_ i g

8]Y ' 8]g_ i gg]cb ' ØVYf ' X]Y ' ni _ØbZh[Y ' DfY]g[YghU ' hi b[' XYf
: Yfbk Àfa Y ' [Yk]bbh' Ub : U\ fh " 9]b _Øfn']W ' j cf[Y ' Y[hYf

F YZYfYbhYbYbhk i fZ'XYg'6i bXYgk]fhgW\UZhga]b]ghYf]i a g'ni f
Bcj Y`Y`XYf'gc[YbUbbhYb'5J 6: Yfbk Åfa YJ 'gc``ZØf'a Y\ f
HfUbgdUfYbn]b`XYf'J Yfgcf[ i b[ `XYf'J YfVfUi W\Yf.]bbYb'Xi fW\
: Yfbk Åfa Yj Yfgcf[Yf'gcf[Yb"8Yf'V]g\Yf][Y'DfcnYgg'k]fX'U`g
i bXi fW\g]W\h][`Ub[YgY\Ybž'XYg\U'V'gc``Yb`_ØbZh][
J YfØZYbh]W\i b[gdZ]W\hYb`ZØf'DfY]gÅbXYfi b[ Yb`Y]b[YZØ\fh
k YfXYb"

K YfbYf'@ hgW\ž; YgW\ÅZhgzØ\ fYf'XYg'5; : K žZcfXYfh`YXcW\`Y]b
[YgYhn`]W\Yg'DfY]gUbdUggi b[gfYW\h"9f'Uf[i a Ybh]Yfhž'XUgg'X]Y
l bhYfbY\`a Yb`]b`VYgh]a a hYb': Å`Yb`X]Y`j YfY]bVUfhYb'DfY]gY
UbdUggYb'a ØggYbž]bgVYgcbXYfY`k Ybb`bYi Y`þj Ygh]h]cbYb
bchk YbX][`g]bXž'X]Y`Xi fW\`X]Y`HfUbgZcfa Uh]cb`XYf
: Yfbk Åfa YgmghYa Y`YbhghY\Yb"Àa`ni Zc`[ Y`]gh'XUg'XYfnY]h][Y
GmghYa `b]W\h'[ YY][ bYhž'i a`X]YgYb'5bZcfXYfi b[Yb`[YfYW\h'ni
k YfXYb"

5bXYfYfgY]hg`ZcfXYfh'XYf'J YfVfUi W\YfnYbhfU`Y`6i bXYgj YfVUbx
fj nVj Ł'Y]bY`i a ZUggYbXYfY`@Ogi b[ži a`X]Y`J YfVfUi W\Yf.]bbYb`j cf
ØVYf\Ø`hYb'DfY]gYb`ni`gW\ØhnYb"FUa`cbU'Dcdž'J c fghÅbX]b`XYg
j nVj ž'VYhcbhž'XUgg'Y]bY`i bUV\Åb[ ]][ Y'DfY]gUi Zg]W\h'bØh][ `gY]"
8]YgY`k ØfXY`Y]bY`Y]b\Y]h]W\Y`?cbhfc``Y`XYf'DfY]gY`i bX`XYfYb
Ni gUa a YbgYhni b[`Yfa Ø[ `]W\Yb`i bX
: Yfbk Åfa Yj Yfgcf[i b[gi bhYfbY\`a Yb`ni f'HY]`bU\`a Y`Ub
GW\`]W\h' b[ gj YfZU\`fYb`j YfdZ]W\hYb"

? `]a UbYi hfU`Y`K Åfa Yj Yfgcf[ i b[ `i bX`bYi Y
9b hk]W`i b[Yb

8Yf'5i gVUi `j cb': Yfbk Åfa Y`ghY`h'Y]bYb`nYbhfU`Yb`6YghUbXhY]`
XYf`\_ca a i bU`Yb`K Åfa Yd`Ubi b[`XUf"8]Y`l a ghY`i b[ `j cb
\Yf_Øa a`]W\Yb`; UgbYhnYb`Ui ZK UggYfgcZ'k ]fX`_f]h]gW\
VYhfUW\hYh"5bZUb[`XYg`š\`fYg`k i fXY`XUg; YVÅi XYYbYf[]Y[YgYhn
`Ui W\`VY`\_Ubbh'U`g`<Y]ni b[ g[ YgYhn` `Xi fW\`XUg
K Åfa Yd`Ubi b[ g[ YgYhn`Yf[Åbnh"8]Yg`j YfdZ]W\hYh'X]Y
6i bXYg`ÅbXYf`XUni ž]\`fY`?ca a i bYb`ni`Y]bYf`K Åfa Yd`Ubi b[
Ubni`Y]hYbž'X]Y`Ui ZY]bY`\_]a UbYi hfU`Y`K Åfa Yj Yfgcf[ i b[ `V]g
&\$() `UVn]Y`h"

9]bY`J]Y`nU\`j cb`Gh`XhYb`gYhnh`Ui Z`X]YgYb`HfYbX" `< Ubbcj Yf
VY]gd]Y`gk Y]gY`gc``V]g`&\$' ) `Y]bY`j c``gh`AbX][ `_]a UbYi hfU`Y
: Yfbk `Afa Yj Yfgcf[ i b[ `i a [YgYhnh`k YfXYb" `6Yf`]b`\\]b[Y[Yb
j YfZ0[h`VYfY]hg`0VYf`XUg`[f0» hY` : Yfbk `Afa YbYh`K YghYi fcdUgž
XUg`]b`XYb`\_ca a YbXYb`<U`fYb`k Y]hYf`Ui g[ YVUi h`k YfXYb`gc``
N]Y``]gh`Ygž`X]Y`9bYf[ ]Y[ Yk ]bbi b[ `j cb`Zcgg]`Yb`6fYbbgbc`ZYb`k]Y
; Ug`i bX`?c`\\Y`Ui Z`YZZ]n]YbhYfY` ; fc»k `Afa Ydi a dYb`i a ni ghY``Ybž
X]Y`5Vk `Afa Y`i bX`5Vk UggYf`bi hnYb"

8]Y`?cghYb`_cbhfc``Y`]b`XYf` : Yfbk `Afa Yj Yfgcf[i b[`V`Y]Vh`U`gc`Y]b
\\Y]» Yg`H`Ya Už`XUg`gck c`\\`X]Y`J`Yfgcf[i b[gi bhYfbY`a Yb`U`g
Ui W`X]Y`J`YfVfUi W`Yf.]bbYb`VYhf]Zn" `8]Y`FY[ i `]Yfi b[Ybž`X]Y`VU`X
Y]b[YZ0`fh`k YfXYb`gc``Ybž`\_0b`bhYb`Y]bYb`Yb`hgW`Y]XYbXYb
9]bZi gg`Ui Z`X]Y`ni \_0bZn][ Y`DfY]g[YghU`hi b[ `\\UVYb`i bX`Ui W`
XUfUi Zž`k ]Y`hfUb`gdUfYbh`X]YgY`Dfc`nYggY`UV`Ui ZYb"

8]Y`< YfUi gZcfXYfi b[ Yb`Z0f`X]Y`6fUbW`Y

8]Y`8]g\_i gg]cb`i a `X]Y` :]bUbn]Yfi b[`i bX`X]Y`XUa]hj YfVi bXYbYb
DfcV`Ya Y`nY][hž`XUgg`XYf`K Y[ `ni f`l a gYmi b[ `XYf`?`]a Un]Y`Y`Z0f
X]Y` : Yfbk `Afa Yj Yfgcf[i b[`j c``Yf`<]bXYfb]ggY`ghYW`h" `8]Y
B`chk YbX][ \_Y]hž( ` `ž) `A]`UfXYb`9i fc`V]g`&\$' \$`ni `]bj Ygh]YfYbž
hf]Zn`Ui Z`Y]bY`F`YU`]h`hž`]b`XYf`ZYgh[ Y`Y[hY`A ]hY`k Y]h`\\]bhYf`XYb
hUhg`A`W`]W`Yb`5bZcfXYfi b[ Yb`ni f0W`V`Y]VYb"

8]Y`\_ca a YbXYb`A cbUhY`k YfXYb`Yb`hgW`Y]XYbX`gY]bž`i a `ni
_`AfYbž`k]Y`X]Y`GhY``i b[bU`a Yb`XYf`j YfgW`]YXYbYb`J`YfV`AbXY
i bX`XYf`J`YfVfUi W`YfnYbhfU`Yb`]b`dc`h]gW`Y`9b`hgW`Y]Xi b[Yb
i a [YgYhnh`k YfXYb`i bX`cV`Yg[Y`]b[ hž`X]Y`J`cf[UVYb`ni f
?`]a UbYi hfU`]h`h`hUhg`A`W`]W`ni `YffY]W`Yb" `8]Y`9b`hk ]W`i b[Yb`]b
XYf` : Yfbk `Afa Yj Yfgcf[i b[`gd]Y[ Y`b`b]W`h`bi f`X]Y
< YfUi gZcfXYfi b[Yb`XYf`9bYf[]Yk YbXY`k ]XYfž`gcbXYfb`Ui W`X]Y
B`chk YbX][ \_Y]h`Y]bYf`hfUb`gdUfYbhYb`i bX`ZU]fYb`DfY]g[ YghU`hi b[
Z0f`U`Y`6YhY]][hYb"

5i gk]f_i b[Yb`XYf`? 0fni b[Yb`Ui Z`X]Y

9bYf[]YYfnYi [i b[

8]Y' ? Øfni b[Yb']a ' ? `]a U! i bX' HfUbgZcfa Uh]cbgZcbXg' f? H: Ł \ UVYb
b]W h' bi f' 5i gk]f_ i b[Yb' Ui Z' X]Y' : Yfbk Åfa Yj Yfgcf[i b[ž' gcbXYfb
Ui W' Ui Z' X]Y' [YgUa hY' 9bYf[]YYfnYi [i b[']b' 8Yi hgW' UbX'' 8Yf
F ØW_ [Ub[' XYf' A]hY' _ ÒbbhY' X]Y' [Yd' UbhYb' ðj Ygh]h]cbYb']b
YfbYi YfVUfY' 9bYf[]Yb' i bX' a cXYfbY' 9bYf[]Y]bZfUghfi _hi f
i bhYf[fUVYb'' 9]b' VYgcf[b]gYffY[YbXYf' 5gdY_h']ghž' XUgg' j]Y' Y
? ca a i bYb' VYfY]hg' Ui Z' X]Y' : ÒfXYfi b[' Ub[Yk]YgYb' g]bXž' XU' g]Y
c \ bY' Ui gfy]W YbXY' F Yggci fW' b' G W' k]Yf[[_Y]hYb' \ UVYbž'] \ fy
? `]a Un]Y' Y' ni ' YffY]W Yb''

⇒ a ' ſ \ f' & \$ & ' VYhfi [' XYf' 5bhY'] YfbYi YfVUfYf' 9bYf[]Yb' Ub' XYf
Ghfca YfnYi [i b[']b' 8Yi hgW' UbX' fi bX' (& DfcnYbh'' l a ' X]Y
bUh]cbU' Yb' ? `]a Un]Y' Y' ni ' YfZØ' Ybž' X]Y' j cfgY \ Ybž' X]Y
HfY]V \ Ui g[UgYa]gg]cbYb' V]g' & \$' \$ i a ')) ' DfcnYbh']a ' J Yf[' Y]W
ni '%- - \$' ni ' fYXi n]YfYbž' a ØggYb' X]YgY' 5bhY']Y' YXcW' k Y]hYf
ghY][Yb'' 8]Y' GY_hcf_cdd' i b[ž' X]Y' Y]bY' J YfbYhni b[' j cb' K Åfa Y! ž
Ghfca !' i bX' A cV']hÅhggY_hcf' j cfg]Y \ hž' k]fX' ni bY \ a YbX' U' g
bch' k YbX][' YfUW hYhž' i a ' X]Y' 9bYf[]Yk YbXY' YZY_h]j ' i a ni gYhnYb''
9]b' i bni fY]W YbXYf' ? H: ' _ ÒbbhY' X]YgY' 6Ya Ø \ i b[Yb' ghUf_
 \ Ya a Yb'' @Ui h' XYa ' 6i bXYgi a k Y' ha]b]ghYf]i a ' _ ÒbbhY' X]Y
9bYf[]Yk YbXY' V]g' & \$' \$ Yhk U' * \$ A]'' UfXYb' 9i fc' _cghYbž' k Ug
nY][hž' XUgg' X]Y' : ÒfXYfi b[' Xf]b[YbX' bch' k YbX][']gh''

8]Y' Fc'' Y' XYf' ? ca a i bYb']b' XYf K Åfa Yd' Ubi b[

8]Y' _ca a i bU' Y' K Åfa Yd' Ubi b[' k]fX']b' 8Yi hgW' UbX']a a Yf
k]W h] [Yf'' GhÅXhY' i bX' ; Ya Y]bXYb' \ UVYb' X]Y' J YfUbhk c fhi b[ž' X]Y
9bYf[]Yj Yfgcf[i b[' bUW \ U'h] [' i bX' ni _i bZgg]W Yf' ni ' [YghU' hYb''
8 UVY']gd]Y' Yb' : Yfbk Åfa YgmghYa Y' Y]bY' nYbhfU' Y' Fc'' Yž
]bgVYgcbXYfY']b' ghÅXh]gW Yb' ; YV]YhYbž' k c' X]Y' 8]W hY' i bX' XYf
6YXUfZ' Ub' 9bYf[]Y' \ cW' g]bX'' 9]b' l a gh]Y [' Ui Z' _]a UbYi hfU' Y
HYW bc' c []Yb']gh' Y]bY' < YfUi gZcfXYfi b[ž' XYf' g]W' j]Y' Y
? ca a i bYb' ghY'' Yb' a ØggYb''

: cfW]Yfh' k]fX' X]Y' _ca a i bU' Y' K Åfa Yd' Ubi b[' Xi fW' fYW h]]W Y
J cf[UVYb' k]Y' XUg' ; YVÅi XYYbYf[]Y [YgYhn'' 8]Y' 6YXYi hgUa _Y]h
j cb' : Yfbk Åfa Y' k]fX' Xi fW' j YfgW]YXYbY' ð]h]Uh]j Yb' Ui Z' @UbXYg!

i bX`6i bXYgYVYbY`i bhYfghf]W\Yb"9g]gh`YXcW\`ni`VYUW\hYbž`XUgg
X]Y`l a gYhni b[ `gc`W\Yf`Dfc[fUa a Y`cZi`Ui Z`K ]XYfghUbX`ghÒ» hž
]bgVYgcbXYfY`k Ybb`Yg`i a `X]Y`l a ghY`i b[`VYghY\YbXYf
⊖ZfUghfi _hi f`i bX`X]Y`XUa ]hj YfVi bXYbYb`Z]bUbn]Y`Yb
5i Zk YbXi b[Yb`[ Y\h"9]bY`i a ZUggYbXY`6Øf[ Yf]bZcfa Uh]cb`i bX
!VYhY`][ i b[ `]gh`i bYf`Àgg`]W\ž`i a `5\_nYdhUbn`i bX`J Yfgh`AbXb]g`ZØf
X]Y`bchk YbX][ Yb`GW\f]hY`g]W\Yfni ghY`Yb"

5_hi Y`Y`GhUh]gh]_Yb`ni f

: Yfbk `Àfa Yj Yfgcf[i b[

9]bY`l a ZfU[ Y`XYg`J YfVUbXYg`ZØf: Yfbk `Àfa Y`nY][hž`XUgg`a Y\`f`U`g
) \$`DfcnYbh`XYf`<Ui g\U`hY`]b`[fc» Yb`Gh`XhYb`VYfY]hg`a]h`Y]bYa
: Yfbk `Àfa YgmghYa`j YfVi bXYb`g]bX"8]Yg`j YfXYi h`]W\h`X]Y
F`Y`Yj Ubn`X]YgYf`J Yfgcf[i b[gUfh]b`gh`Xh]gW\Yb`F`Y[]cbYb"
5`Y`fX]b[g[]Vh`Yg`Yf\YV`]W\Y`DfY]gi bhYfgW\]YXY`nk ]gW\Yb`XYb
j YfgW\]YXYbYb`5bV]YhYfbž`k Ug`Ui W\`ZØf`X]Y`J YfVfUi W\Yf`Y]bYb
k YgYbh]W\Yb`5gdY`h`XUfghY`h"

9]bY`Ghi X]Y`XYg: fUi b\cZf`⊖gh]hi hg`dfc[bcgh]n]Yfhž`XUgg`X]Y
BUW\ZfU[Y`bUW\ : Yfbk `Àfa Y`V]g`&\$' \$`i a `V]g`ni ` '\$`DfcnYbh
ghY][Yb`\_ÒbbhYž`k Ybb`X]Y`U`\_hi Y`Y`?`]a UgW\i hngfhUhY[]Y
_cbgYei Ybhj YfZc`[ h`k]fX"8]Yg`i bhYfghfY]W\h`X]Y`Bchk YbX][_Y]hž
]b`XYb`5i gVUi `XYf: Yfbk `Àfa]bZfUghfi _hi f`ni`]bj Ygh]YfYb`i bX
X]YgY`bUW\`U`h][ `ni`[ YghU`hYb"⊖`5bVYhfUW\h`XYf`g]W\
j Yf`AbXYfbXYb`5bZcfXYfi b[Yb`a ØggYb`5bV]YhYf`]bbcj Uh]j Y
@Øgi b[Yb`Ybhk ]W\_Y`bž`i a `gck c\`9ZZ]n]Ybn`U`g`Ui W\
BUW\`U`h][_Y]h`ni`[Yk `À`f`Y]ghYb"

8YhU]`g

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