

<]h! UbX!F i b `]b `@]ddghUXh. `; fUi Yf`C dY`
7 c fgU`VYgWÅX][h°

ϕ`@]ddghUXh`_Ua `Yg`ni `Y]bYf`J Yf`_Y\fgi bZU``Zi WÅh.`9]b
[fUi Yf`C dY`7 c fgU`k i fXY`VYgWÅX][h" <]bk Y]gY`V]hY`Ub`X]Y
Dc`]nY]°

@]ddghUXh` `5a `8 cbbYfghU[UVYbX`Yf`YVhY`X]Y`K c\ b[Y[YbX`Ub
XYf`C hnc! < U\ b! GhfU» Y`Y]b`i bYfZfYi `]WÅYg`9fY][b]g" Nk]gWÅYb`%,
i bX`%- `I \f`_Ua `Yg`Xcfhni `Y]bYa `J Yf`_Y\fgi bZU``ž`XYf`ZØf`XYb
6Yg]hYf`Y]bYg`[fUi Yb`C dY`7 c fgU`hYi Yf`k YfXYb`_ØbbhY``8Yf
K U[Ybž`gc f[ZÅ`h][`Ui ZY]bYa `DUf`_d`Uhn`UV[YghY``hž`k i fXY
cZYbVUf`j cb`Y]bYa `i bVY`_UbbhYb` : U\fnYi [`k Å\ fYbX`Y]bYg
F Ub[]Yfa Ub`Øj Yfg`VYgWÅX][h"8Yf`J Yfi fgUWÅYf`]Y» `XYb
VYgWÅX][hYb`C dY`Y]bZUWÅ`ni fØW`_i bX`a UWÅhY`g]WÅ`Ui g`XYa
GhUi Vž`c\ bY`g]WÅ`i a `Y]bY`GWÅ UXYbgfY[i `]Yfi b[`ni `Øa a Yfb"

: Øf`X]Y`6YhfcZYbYb`X]YgYf`5fhj cb`J cfZU``_Ubb`X]Y`G]hi Uh]cb
gWÅbY``gY\ f`Åf[Yf`]WÅ`k YfXYb"9]b`UbgÅgg][Yf`5i hcZU\ fYfž`XYf`Ui Z
gY]b`5i hc`Ub[Yk]YgYb`]ghž`g]Y\h`g]WÅ`a Ø[`]WÅYfk Y]gY`c\Yb
F YdUfUhi f_cghYb`[Y[YbØVYfž`X]Y`Xi fWÅ`XUg`i bj YfUbhk cfh`]WÅY
J Yf\U`hYb`XYg` : U\ fYfg`XYg`i bVY`_UbbhYb` : U\fnYi [g`j Yfi fgUWÅh
k i fXYb"9g`]ghVYa Yf`_Ybgk Yfhž`k]Y`cZh`gc`WÅY`J cfZÅ`Y`[YgWÅY\Yb
i bX`X]Y`I bVY`_UbbhYb`Y]bZUWÅ`XUj cb`_ca a Ybž`c\ bY
J YfUbhk cfhi b[`ni `ØVYfbY\ a Yb"

5i Zfi Z`ni f`A]h\]`ZY

8]Y`Dc`]nY]\ Uh`Ui Z[Yfi ZYbž`XUgg`NYi [Ybž`X]Y`Yhk Ug`ØVYf`XYb
J cfZU``k]ggYb`cXYf`gc[Uf`XUg`ZØWÅh][Y` : U\fnYi [` [YgY\Yb
\UVYbž`g]WÅ`i a [Y\YbX`a Y`XYb`gc`Yb"i bhYf`XYf`HY`YZcbbi a a Yf
\$&- (%! - %\$\$\$`k]fX`YXY`ϕZcfa Uh]cb`k]`_ca a Yb`[Y\Y]» Yb"

GW XXYb`i bX`? cbgYeI YbnYb

8Yf`VYgWAX][hY`C dY`7 c f g U` [Y\ Òfh`Y]bYa` 5bk c\ bYfž`XYf`bi b
a`]h`XYb` : c` [Yb`XYg`J c f ZU`g` _cbZfcbh]Yfh`]gh`"BYVYb`XYb
i ba`]hhY`VUFYb`F YdUfUhi f`cghYb`_Ubb`Y]b`gc`WX Yg`9fY][b]g`Ui W
ni gÀm`]WY`Z]bUbn]Y`Y`6Y`Ughi b[Yb`a`]h`g]W`Vf]b[Ybž`k`]Y`Yhk U
Yj Ybhi Y`Y`K` Yfha`]bXYfi b[Yb`XYg` : U\fnYi [g`i bX`X]Y
I bUbbY\ a`]W`_Y]hYbž`X]Y`a`]h`XYf`Gi W`Y`bUW`Y]bYa
F YdUfUhi fX]Ybghj YfVi bXYb`g]bX`"8 U\Yf`]gh`Yg`k`]W`h][ž`XUgg`XYf
J Yfi fgUW`Yf`ni f`J YfUbhk cfhi b[` [Ync[Yb`k`]fXž`i a` gck c\`
Z]bUbn]Y`Y`U`g`Ui W`Y`a` ch]cbU`Y`GW`AXYb`ni`a`]b]a`]YfYb"

9]b`gc`W`Yf`J c f ZU`g` _Ubb`Ui W`k`Y]hfY]W`YbXYfY` [YgY`g`W`UZh`]W`Y
5i gk`]f`_i b[Yb`\UVYb`"5bk c\ bYf`_ÒbbhYb`g]W`X`i fW`X`Y]
Ni bU\ a` Y`j`cb`J Yf`_Y\ fgi bZ`Y`b`]b`K`c\ b[YV]YhYb`i bg]W`YfYf
ZØ`Yb`"8]Yg`_ÒbbhY`Ub[Zf]gh][`XUg`J YfhfUi Yb`]b`X]Y
J Yf`_Y\ fgg]W`Yf\Y]h`VYY]bhf`AW`h][Yb`i bX`gc[Uf`ni` : cfXYfi b[Yb
bUW`a` Y`f` , VYfk UW`i b[`cXYf`j` Yfgh`f`_hYb`A U» bU\ a` Yb`ZØ`f`X]Y
J Yf`_Y\ fgg]W`Yf\Y]h`ZØ`fYb"

J Yf`_Y`f`gi bZU`Z`i W`hYb`]b`8Yi hgW`UbX

⊕`8Yi hgW`UbX`]gh`X]Y`J Yf`_Y`f`gi bZU`Z`i W`h`Y]b`b]W`h`gY`hYbYg
DfcV`Ya` "'@Ui hi` bZU`ghUh]gh]_`XYg`GhUh]gh]gW`Yb`6i bXYgUa` hYg
k`i fXYb`]a` `]U\ f`&\$&%]b`8Yi hgW`UbX`a` Y`f`U`g`&&\$`\$\$\$
J Yf`_Y`f`gi bZ`Y`fY[]ghf]Yfhž`VY]`XYbYb`Yg`ni` : U\fyfZi W`h`_Ua` "
8]Yg`nY][hž`XUgg`XYfUfh][Y`J c f Z`Y`_Y]b`9]bnY`ZU`g]bXž`gcbXYfb
Y]b`k`]YXYf`_Y`fYbXYg`D\`Abca` Ybž`XUgg`g]W`ØVYf`j` YfgW`]YXYbY
Gh`XhY`i bX` : Ya` Y]bXYb`\]bk`Y[`n]Y`h"

8Yf`\Ài Z][ghY` ; fi bX`ZØf` : U\fyfZi W`h`]gh`X]Y`5b[gh] cf
fYW`h]W`Yb`?cbgYeI YbnYb`"J]Y`Y`DYfgcbYb`ZØ`Yb`g]W`
ØVYfZcfXYfhj`cb`XYf`G]hi`Uh]cb`i bX`k`c`Yb`g]W`XYb
I bUbbY\ a`]W`_Y]hYbž`X]Y`Ui`g`Y]bYa` J Yf`_Y`f`gi bZU`fYgi`h]YfYb
_ÒbbhYbž`Ybhm]Y\Yb`"8Yg\U`V`]gh`Yg`k`]W`h][ž`X]Y`^ ZYb`h]W`_Y]h
ØVYf`X]Y`fYW`h]W`Yb` : c` [Yb`Y]bYf` : U\fyfZi W`h`Ui`Zni`_`ÁfYbž`i a
XUg`6Yk`i`ggghY]b`ni`gW`ÁfZYb`i bX`a` Y`f`A`YbgW`Yb`XUni`ni
VYk`Y[Ybž`VY]Y]bYa` I bZU`Ubni`U`hYb`i bX`X]Y`bØh][Yb

ϕZcfa Uh]cbYb`Ui gni hUi gWYb"

F YW h`]W Y`F U\ a YbVYX]b[i b[Yb

B UW`XYi hgWYa`F YW h`]gh`Yg`i bYf`Agg`]W ž`VY`]Y]bYa
J Yf_Y`fgi bZU``Ubnl \U`hYb`i bX`XYb`GW UXYb`ni`fY[i`]YfYbž
i bUV`Ab[] [j cb`XYf`GW k YfY`XYg`J cfZU`g"z`%(&`XYg
GhfUZ[YgYhnVi WYg`fGh; 6Ł`gdf]W h`_UfY`K cfhY.`K Yf`g]W j ca
l bZU`cfh`Yb hZYfb hž`c`bY`gY]bY`ϕYb h]h`h`i bX`X]Y`l a gh`Ab`XY`XYg
l bZU`g`ZYg hni \U`hYb`ž`a UW`h`g]W`ghfUZVUf"8]Y`GhfUZyb`_ÖbbYb
j cb`; Y`X!`V]g`_`b`ni`i`fY]\Y]hgghfUZyb`fY]W Yb ž`Y`b UW`GW k YfY
XYg`8Y`_hg" <]bni`_ca`a Yb`a Ö[`]W Yfk`Y]gY`Ui W`n]j`]fYW h`]W Y
5bgdfØW Y ž`X]Y`XYf`; YgW`AX][hY`[Y`hYb`X`a UW`Yb`_Ubb"

8 UfØVYf`\]bUi g`UVYb`j`]Y`Y`Gh`AX`hY`gdYn]Y``Y`Dfc[fUa`a`Y`ni`f
GYbg]V`]g]Yfi b[`XYf`6Øf[Yf`]bg`@YVYb`[Yfi ZYb ž`X]Y`XUfUi Z
UVn]Y`Yb ž`XUg`6Yk`i`gghgY]b`ZØf`X]Y`J YfUbhk`cfh`i b[`]a
GhfU» Ybj Yf_Y`f`ni`gW`ÅfZYb"8]YgY`Dfc[fUa`a`Y`VY]b\U`hYb`c`Zh
ϕZcfa Uh]cbghU[Y ž`K`cf_g`cdg`i bX`j`cb`XYf`Dc`]nY`] [YZØ`fhY
5i Z`Àfi b[g_Ua`dU[bYb ž`X]Y`XUg`N]Y``\UVYb ž`XUg`J Yf`U`hYb`j`cb
5i hcZU`fYfb`ni`VYY]bZi ggYb`i bX`gca`]h`J Yf_Y`fgi bZ`Y`i bX
: U`fYfZi W`hYb`ni`fYXi`n]YfYb"

NYi [YbUi Zfi Z`i bX`X]Y`K`]W h][_Y]h`XYf ; Ya`Y]bgW`UZh

8]Y`F`c``Y`XYf`; Ya`Y]bgW`UZh]gh`VY`]XYf`5i Z`Àfi b[`]j`cb
J Yf_Y`fgi bZU`gZi W`hYb`j`cb`Yb`hgW`Y]XYb`XYf`6YXYi`hi`b[``NYi [Yb
g]bX`c`Zh`X]Y`Y]bn][Yb ž`X]Y`k`Yfhj`c``Y`ϕZcfa Uh]cbYb`ØVYf`XYb
ZØW`h][Yb`i`U`fnYi [ZU`fYf`]YZYfb`_ÖbbYb"8]Y`Dc`]nY`]j`cb
@]ddghUXh`\Uh`XU`Yf`XYb`5i Zfi Z[YghUfhYhž`g]W`a`]h`<]bk`Y]gYb`ni
a`Y`XYb ž`i`a`XYb`J`cfZU``Ui`Zni`_`ÀfYb"9]bY`Yb[U[]YfhY
; Ya`Y]bgW`UZh`_Ubb`c`Zh`Yb`hgW`Y]XYb`X`X`Uni`VY]hfU[Yb ž`XUgg
J YfUbhk`cfh`]W`Y``c`_U`ni`f`F`YW`Yb`gW`UZh[Ync[Yb`k`YfXYb"

8 UfØVYf`\]bUi g`_Ubb`Y]bY`Gh`Åf`_i`b[`XYf`B UW`VUfgW`UZh`gV]bXi`b[
XUni`ZØ`fYb ž`XUgg`g]W`5bk`c`bYf`[Y[YbgY]h][`i`bhYfghØhnYb`i`bX

g]W\YfghY``Ybž'XUgg'X]Y'GhfU»Yb'g]W\YfYf'g]bX"8]Yg'_ÒbbhY'Ui Z
`Ub[Y'G]W\h'b]W\h'bi f'X]Y'<Ài Z[_Y]hj cb'J Yf_Y\fgi bZÀ``Yb
j Yff]b[Yfbž'gcbXYfb'Ui W\XUg'Ni gUa a Yb[Y\Òf][_Y]hg[YZØ\``]b
Y]bYf'; Ya Y]bXY'ghÅf_Yb"

8YhU]`g

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