

## =bhY[fUh]cb']b'XYf'5`hYbdZ`Y[Y. 5i g`AbX]gWXY': UWX\_fAZhY'[YghU`hYb Ni \_i bZh

 $8 ]Y \cdot 9j \ Ub[Y']gWXY \cdot 5 `hYb']`ZY'i \ bX \cdot 5 fVY]hgU[Ybhi f dfÀgYbh]YfYb `YfZc`[fY]WXY' \ bhY[fUh]cbgVY]gd]Y`Y'Ui g'XYf 5 `hYbdZY[Y']a '@UbX_fY]g' < YfgZY`X!F chYbVi f["$ 

 $= @UbX_fY]g' < YfgZY`X!FchYbVif[``\Uh'g]W\`Y]b`YfZfYi`]W\Yf`HfYbX \\ ]b`XYf`5`hYbdZY[Y`Ybhk]W_Y`hž`XYf`X]Y`$\phY[fUh]cb`Uig`\hX]gW\Yf : UW\_f\hZhY`]b`XYb`5fVY]hga Uf_h`Z\hXYfh''8]Y`9j Ub[Y`]gW\Y 5`hYb\]`ZY`; Ygi bXVfi bbYbž`a]h`]\fYb`GhUbXcfhYb`]b`6UX`<YfgZY`XZ\D\]`]ddgh\U``i bX`FY]`cgz`nY][hž`k]Y`[Y`i b[YbY`$\hY[fUh]cb`]b`XYf\DfUl]g`Ui gg]Y\h''`6Y]`Y]bYa`DfYggYhYfa]b`XYf`6i bXYgU[Ybhif`Z\hYf\SfVY]h`6UX`<YfgZY`X!: i`XU`k ifXYb`dcg]h]jY`6Y]gd]Y`Y`j cf[YghY``hz\X]Y`XUg`DchYbh]U``j cb`Ui g`\hX]gW\Yb`: UW\_f\hZhYb`j YfXYi h`]W\Yb''$ 

 $9]bY`XYf`j cf[YghY``hYb`A]hUfVY]hYf]bbYb`]gh'X]Y``$!`Å\f][Y`=fYbYB[Ub[cbY`Ui g`? Ua Yfi b"`J cf`ZØbZ`&J\fYb`_Ua `g]Y`bUWX8Yi hgWX`UbXž`i a `Y]b`Ghi X]i a `Ui Zni bY\a Ybž`k Ug`b]WXh`k]Y[Yd`Ubh`Zi b_h]cb]YfhY"`GhUhhXYggYb`ghUfhYhY`g]Y`Y]b`: fY]k]``][YgGcn]U`Yg`&J\f`i bX`YbhXYW_hY`]\fY`@Y]XYbgWXUZh`ZØf`X]Y5`hYbdZY[Y"`\Rightarrow fY; Ugha i hhYf`UfVY]hYhY`]b`X]YgYa `6YfY]WXž`k Ug\fYbY`XYb`Ni [Ub[`Yf`Y]WXhYfhY"`\HMh`]gh`g]Y`]a `5`hYbnYbhfi a < cgd]hU``hÀh][`i bX`VYhcbhž`k]Y`[i h`g]Y`]b`]\fYa `HYUa `]bhY[f]Yfh]gh"`\Rightarrow fY`fOYf]WXhY`ØVYf`X]Y`5_nYdhUbn`VY]`6Yk c\bYf]bbYb`i bX6Yk c\bYfb`\YVYb`X]Y`dcg]h]j Y`K]f_i b[`j cb`J]Y`ZU`h`]a 5fVY]hgi a ZY`X`\Yfj cf"$ 

=bhY[fUh]cb'XifWX'K Y]hYfV]`Xib['ibX
I bhYfghØhnib[

 $DYhYf'; i ]f[i ]g'A ]'U]'\check{z}'Y]b'' - !'\grave{A} \setminus f][Yf'[Y`YfbhYf'6i W. \setminus U`hYf'Ui g GdUb]Yb\check{z}']gh'Y]b'k Y]hYfYg'6Y]gd]Y`'ZØf'YfZc`[fY]W.Y'<math>\oplus$ bhY[fUh]cb'' GY]b'K i bgW.'bUW.'Y]bYf'VYggYfYb'Ni \_i bZh'ZØf'g]W.'i bX'gY]bY?]bXYf'ZØ\fhY']\b'bUW.'8 Yi hgW.`UbX'''9f'UfVY]hYh']b'XYf < Ui gk ]fhgW.UZh'i bX'k ]fX'VU'X'Y]bY'K Y]hYfV]'Xi b['ni a '6YhfYi Yf UbZUb[Yb'''GY]b': U``'i bhYfghfY]W.h'X]Y'6YXYi hi b['XYf'VYfi Z]W.Yb I a cf]Ybh]Yfi b['i bX'K Y]hYfV]'Xi b[ ži a 'XYb'Y][YbYb'D`Uhn']a bYi Yb'@YVYbgi a ZY`X'ni 'Z]bXYb''

## 8 Yf'6 Y X UfZ'Ub': UWX \_fÀZhYb']b'X Yf 5`hYbd Z`Y[Y

8]Y'i bj YfÀbXYfh'\c\Y'BUW\ZfU[Y'bUW\'5fVY]hg\_fÀZhYb']b'XYf
5`hYbdZY[Y'\_Ubb'b]W\h'ØVYfgY\Yb'k YfXYb"'@in]U'?fYa gYfž
DfYggYgdfYW\Yf]b'XYf'5[Ybhi fž'VYhcbhž'XUgg']b'XYf'FY[]cb'U\_hi Y``
Yhk U'%"\$\$\$'cZZYbY'GhY``Yb']b'j YfgW\]YXYbYb'6YfY]W\Yb'ni
VYgYhnYb'g]bXž'k cVY]'Ui W\'X]Y'5`hYbdZY[Y'b]W\h'j YfgW\cbh
V'Y]Vh''6YgcbXYfg'k]W\h][']gh'Ygž'X]Y'=bhY[fUh]cbgei chY'j cb
Ui g`AbX]gW\Yb'5fVY]hg\_fÀZhYb'k Y]hYf'ni 'Yf\O\Yb"'Jcb'5i[i gh
&\$&' 'V]g'5i[i gh'&\$&('k i fXYb'VYfY]hg'&"(\$\$'A YbgW\Yb']b'XYb
5fVY]hga Uf\_h']bhY[f]Yfhž'XUfi bhYf'++\$'a ]h'Ui g`AbX]gW\Ya
<]bhYf[fi bX"

8]Y 5bhY]`bU\a Y`i bX`I bhYfghØhni b[ `XYf`5`hYb\]`ZYnYbhfYb`Ub]\fYb`Ui g`ÀbX]gW\Yb`A ]hUfVY]hYbXYb`gd]Y`h`Y]bY`YbhgW\Y]XYbXY Fc``Y"`8]Y`:  $\emptyset$ \fi b[ g\_fÀZhY`X]YgYf`9]bf]W\hi b[ Yb`gYhnYb`g]W\`U\_h]j XUZØf`Y]bY`]bhY[ fUh]j Y`i bX`i bhYfghØhnYbXY`5fVY]hgi a [ YVi b[

ni 'gWX UZZY bž']b'XYf'X]Y'A ]hUfVY]hYf'g]WX'k c\`ZØ\`Yb'i bX']\fY
: À\][\_Y]hYb'VYgha Ò[`]WX'YbhZU`hYb'\_ObbYb"'8]YgY'\dangle ]h]Uh]j Yb'g]bX
b]WX h'bi f'ZØf'X]Y'A ]hUfVY]hYf'j cb'6YXYi hi b[ž'gcbXYfb'Ui WX'ZØf
X]Y'[YgUa hY'6fUbWXYž'X]Y'Xf]b[YbX': UWX\_fÀZhY'VYbOh][hž'i a 'XYb
<YfUi gZcfXYfi b[Yb'XYf'Ni \_i bZh'VY[Y[bYb'ni '\_ObbYb"

8 Y hU]`c

6Ygi WXYb G]Y i bg Ui Z b!U[ "XY