



IEST8003

9bj]fcba YbH@YUXYfg\]d`DfUWjW a `= `Dfc YWicf

7 ci fgY`Cj Yfj]Yk

GhJZZ`7 cbhJWw`8 YhU]`g

7 cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cW]hcb	D\cbY
8f`5`YI UbXfU K U`_yf	U"k U`_Yf4 i bgk "YXi "Ui	6mUddc]bħa Ybh		

GWxcc``7 cbhJWw`bZcfa Uh]cb

GWxcc``cZ<i a Ub]h]Yg`UbX:@Jb[i U[Yg

@cW]hcb. `GWxcc``C Z]WžA cfj Yb`6fck b`6i]X]b[ž`@Yj Y``&ž&),

CdYb]b[`<ci fg.`A cbXUm!`: f]XUmž`- Ua `!) da

D\cbY. `ž`*%&`i`-`' ,) `)%*, %

: U! . `ž`*%&`i`-`' ,) `; , +\$)

9a U]. [\U`4 i bgk "YXi "Ui](#)

5ggYgga Ybh

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
Dcfhzc`]c`	%%\$i	H67	%ž&ž' ž(ž)

5ggYgga Ybh8YHU]`g

5ggYgga Ybh%`Dcfhzc`]c`

GHUfhXUH. H67

@Yb[h. (ž\$ž\$'k cfXg`]b`hcHU`

8YHU]`g.

Dcfhzc`]c`cZ(ž\$ž\$'k cfXg`"H\Y`dcfhzc`]c`fYei]fYg'ghi XYbhg`hc`XcW a YbhUbX`fYZYWii dcb`h\Y]f`dfc`YWhcf
]bhYfbg\]d`UWj]]hYg`" ž]g`i bXYfHU_Yb`h\fc [\`h\Y`hYfa` UbX`]bW`XYg`U`fYgYUfVX`Vf]Y`Z`dfUW`W a`X]UfmUbX
cfU`dfY` UU ggYX ZF i) Ł Xg[c`X

5 HbXUbW F Yei JfYa Ybhg

D YUgY bchY hUhYWhi fY fYWfX]b[g UfY bchUj U]UVY Zcf h]gW i fgY" Gh XYbhg UfY gfcfb[mYbW i fU[YX hc UHbX U WUggYg UbX WbHWhiY 7 ci fgY 5i hcf]mfc a U_Y UHfbUhj Y UffUb[Ya Ybhg Zcf WUggYg a JggYX"

7 ci fgY GWYXi Y

[J Jk WUgg ha YHUY](#)

Hja YHUY

8UH	HmdY	7 cbhYbh
K YY_% %) : YVfi Ufm! %- : YVfi Ufm	C b]bY 5Wij Jlm	A Yh7 ci fgY 5i hcf]mX]gW gg'dfc YWhUja g UbX gW dY/X]gW gg'dUfbYf'cf[Ub]gU]cb
K YY_&.&&: YVfi Ufm! &* : YVfi Ufm	: JYXk cf_	5HbX'dUfbYf'cf[Ub]gU]cb
K YY_' .:%A UfW !') A UfW	: JYXk cf_ C b]bY 5Wij Jlm	7 cb]bi Y' bHfbg\]d @YUXYfg\]d'gYgg]cb! XYj Y`cd'dfc YWhUja g UbX gW dY
K YY_(. ; 'A UfW !' %& A UfW	: JYXk cf_ 5ggYgga Ybh	7 cb]bi Y']bHfbg\]d Gi Va]hYdcfhcb'dfc YWhUja g UbX'gW dY
K YY_) .:% 'A UfW !' %- A UfW	: JYXk cf_ C b]bY 5Wij Jlm	7 cb]bi Y']bHfbg\]d @YUXYfg\]d XYj Y`cda YbhgYgg]cb
K YY_* .:&&'A UfW !' &* A UfW	: JYXk cf_	7 cb]bi Y']bHfbg\]d
K YY_+ .:&- 'A UfW !' & 5df]	: JYXk cf_ C b]bY 5Wij Jlm	7 cb]bi Y']bHfbg\]d @YUXYfg\]d XYj Y`cda YbhgYgg]cb
K YY_ , .) '5df]'! - '5df]'	: JYXk cf_	7 cb]bi Y' bHfbg\]d
K YY_ - .:%&'5df]'! %* 5df]'	: JYXk cf_ C b]bY 5Wij Jlm 5ggYgga Ybh	7 cb]bi Y' bHfbg\]d @YUXYfg\]d'gYgg]cb Gi Va]hdfUW]W a 'dcfhZ'cZXY'j] Yf'cfU`dfYgYbH]cb
K YY_ %\$. %- '5df]'! '& 5df]'	: JYXk cf_ 5ggYgga Ybh	:]bU`k YY_`cZ]bHfbg\]d Gi Va]hZ]bU`fYdcfh

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

D`YUgY`gYY`A ccX`Y`Zcf`XYHJ]`g"

F YWca a YbXYX`F Ygci fWg

D`YUgY`gYY`A ccX`Y`Zcf`XYHJ]`g"

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

Gh XYbkg`k`]"`Uj Y`hY`cddcfh b]mhc`dfcj]XY`]bZcfa U`ZYXVUW`h`fci [`]ci h`hY`h`fa `UbX`Zcfa U`ZYXVUW`
Uh`hY`YbX`cZ`h`fa `h`fci [`]h`Y`A n9l dYf]YbW`gi fj Ym`

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

Hi fb]h]b 'Gi Va]gg]cb

Ʒmci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UH'Ya dh]b['hc'gi Va]hmc i f'Ugg][ba YbhiH'fci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-',) " ' ' %cf'Ya U]'H'Ya 'cb'YI HYfbU'HY'f'gi ddcfh4 i bgk "YXi "Ui "'Gi ddcfh
\ci fg'UfY', .\$\$Ua '—%\$.\$\$da 'cb'k YY_XUmg'UbX'-. \$\$Ua '—) .\$\$da 'cb'k YY_YbXg'fI *) 'XUmg'U'm'YUfI" Ʒmci
UfY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'Zi 'hk]H'Hi fb]h]b'mci 'a UmUdd'm'Zcf'Ub'YI HYbg]cbž'Vi hmc i
a i ghfYH]b'mci f'h]W_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'f'Yj UbhXcW a YbHgE'hc
]bWi XY'Ug'Yj]XYbVW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'jW]h]cb" Ʒmci 'Ya U]'9I HYfbU'Gi ddcfhmc i 'k]
Ui 'ca UH]W]m'f'YW]j Y'U'h]W_Yhbi a VYfž'Vi h]Zmci 'HY'Yd\cbY'mci 'k]'b'YX'hc'gd'YW]W]m'Ug_ 'Zcf'cbY"
Hi fb]h]b'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gmgh'Ya 'ghU'g'cb'Hk]H'Yf"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]H'YX'Y'YW'fcb]W]m'j]U'Y]H'Yf'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bgHUbVW'g'k \YfY'H'g]g'bc'hd'cgg]V'Yž'hk]'VY'gh'UH'X'cb'mci f'Wci fgY'g'A ccX'Y'g]H'k]H
U'HYfbUH] Y'gi Va]gg]cb'XYH]g"

: cf]bZ'fa UH]cb'cb'\ck 'hc'gi Va]hUgg][ba YbHg'cb]bYj]U'A ccX'Y. \H'hdg.#gh XYbH'i bgk "YXi "Ui #ck!
gi Va]hUgg][ba YbH'a ccX'Y

5 WUXYa]W< cbYgmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i`g]b[`h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[`h`Y`a` `U`g`m`c`i`f`c`k`b`" `#`W`U`b`h`U`_`Y`a` `U`b`m`
Z`c`f`a`g`Z`Z`c`a` `X`Y`]V`Y`f`U`H`Y` `W`X`Y`U`H]b[`h`c`U`W`W`Y`X`Y`b`h`U`m`i`W`c`d`m]b[`Z`c`a` `U`g`c`i`f`W`k`]h`c`i`h`U`W`b`c`k` `Y`X[`Y`a` `Y`b`h`

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hžI BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby'j]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX'j]bZcfa Uh]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k]`VY'ZJa]]Uf'hc'mci ž'ch'Yfg'k]`VY'byk " "; U]b]b['U'gc`X'i bXYfghUbx]b['cZU`h'Y fY'UH'X'UgdYW'g'cZ9@-G9'k]`Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hd. #gj V'YWf i \]XYg" \]VfUfm'i bgk "YXi "Ui #` \]gY#JVci h' \]gY](#)

