



IEST5003

5XXfYgg]b['9bj]fcb a YbhU`'ggi Yg

HYfa `C.bY`'#`&\$%-

7ci fgY`Cj Yfj]Yk

`GHUZZ7cbhUWw8YHJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj]m	@cWUjcb	D\cbY
DUi ``6fck b	dUi ``Vfck b4 i bgk "YXi "Ui	9a Uj`jg`VYgh WcbhUWw`A YYHb[g VmUddc]bta Ybt'	A cfj Yb`6fck b 6i]X]b[A 6' *)	\$(%' ,) +\$

GWxcc``7cbhUWw`bZcfa Uhjcb

GWxcc``cZ<i a Ub]hYg`UbX`@Ub[i U[Yg

@cWUjcb. `GWxcc``C Z]WZ`A cfj Yb`6fck b`6i]X]b[ž@Yj Y``&ž&),

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

D\cbY. `ž*%&`-' ,) `%*, %

: U! . `ž*%&`-' ,) , +\$)

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

7ci fgY'8YHJ`g

7fYX]hDc]bqg`*`

Gi a a UfmicZ\hY'7ci fgY

H\]g`Wci fgY`i` ghfUH`g`h`Y`bUhi` fY`cZ`UbX`bYYX`Zcf`a`i`h`!`cf`fUbg!X]gVd`d`bUfmUddfcUW`Yg`Zcf`UXXfYgg]b[
Ybj]fcba`YbH`dfcV`Ya`g`cZbU]cbU`UbX`#cf`[`cVU`]a`dcfHUbW`"; fci`d`k`cf`_`gYa`]bUf`dfYgYbH]cbg`k`]"`
XfUk`cb`W`ffYbhc`f`fYW`bh`_YmYbj]fcba`YbH`]ggi`Yg`UbX`k`]"`VY`gi`ddcfH`X`VmVf]YZ`YW`i`fYg`"Gca`Y`cZ`h`Y`
hcd]Mg`mci`k`]"`Wcj`Yf`UfY`Ybj]fcba`YbH`]"`cj`YfbUbVW`Z`]bh`fbU]cbU`Ybj]fcba`YbH`fY`[`]a`Yg`#`W`bj`Yb]cbg/
ZUa`]b[`UbX`XYZ]b]b[`Ybj]fcba`YbH`]"`ggi`Yg`/di`V`]WdUfh]W]dU]cb`UbX`gH`U`Y`c`XYf`Yb[`U[`Ya`Ybh]b`XYW]g]cb
a`U`_`b[`/]bH`[`fUH`X`UbX`Zcfk`UfX`cc_]b[`UbU`mg]g`/d`Ubb]b[`Zcf`gi`ghU]bUV`Y`XYj`Y`cda`Ybh`gV]YbW`Z`f]g`_`UbX
_bck`YX[`Y`/`W`ca`d`YI`gmg]H`a`g`UbX`UXUdh]Y`a`UbU[`Ya`Ybh`/`gi`ghU]bUV`Y`bUhi`fU`fYgci`fW`a`UbU[`Ya`Ybh/
Ybj]fcba`YbH`]"`a`dUW`g`cZdfcXi`W]cb`UbX`W`bgi`a`dh]cb"

7ci fgY`@YUfb]b[`Ci`hWca`Yg

%`8Ya`cbghfUH`Ub`UXj`UbW`X`i`bXYfghUbX]b[`cZ`h`Y`a`i`h`!`X]gVd`d`bUfmVcXmicZ`_bck`YX[`Y`bYYXYX`Zcf
Ybj]fcba`YbH`]"`a`UbU[`Ya`YbhUbX`Udd`mX]gVd`d`bUfmUbX`fUbg!X]gVd`d`bUfm]df]bW]d`Yg`UbX`dfUW]W]g
h`bYk`cf`W`ca`d`YI`W`U`Yb[`Yg`"
&"`8Yj`Y`cd`UbU`m]W]g`_]gZ`UXj`UbW`X`W]h]WU`hUb`%o

ghi XYbHg'UFY'YI dYWwXž'cb'k YY_'miVUg]gž'hc'k f]h'U'V'c['YbhfmfYZYW]b['cb'h\Y]f'YUfb]b['cZ'h\Y'k YY_'m
hcd]W'8]ghUbWw'ghi XYbHg'k]''U'gc'hU_Y'fYgdcbg]V']]miZcf'YUX]b[ž'YbWči fU[]b['UbX'a cXYfU]b['cb'jBY
X]gW gg]cb'cj Yf'cbY'Z ''k YY_ž'cb'h\Y'k YY_'mi b]hcd]WUbX#cf'WUgY'ghi Xn'f'H\Ymk]''dfcXi W'Ub'cd]b]cb
YggUmUg'h\Y'Z]bU'Ugg][ba YbhZcf'h\Y'Wči fgY"

5ggYgga Ybh

: i f\Yf[i]XUbW'Uj U]UVY'j]U'hY'Wci fgY'A ccX'Y'g]hY"

5ggYgga YbhHUg_g'

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH'	Gh XYbh@YUfb]b[Ci hWta Yg'5ggYggYX
K YY_'m6`c[]	' \$i	Xi Y'YUW'k YY_	%z&Z ž(ž)
:]Y'X'5gg][ba Ybh	&\$i	8i Y'a]X'hYfa žYI UWhXUH'hc VY'UXj]gYX	%z&Z ž(ž)
; fci d'7 UgY'Gh Xmi	&\$i	Hck UfXg'hY'YbX'cZH'fa " 8UH'H65"	%z&Z ž(ž)
C d]b]cb'9ggUm	' \$i	8i Y'Uh'hY'YbX'cZH'fa "'8UH' H65"	%z&Z ž(ž)

5ggYgga Ybh8YHJ]`g

5ggYgga Ybh% 'K YY_'m6`c[

GhUfhXUH'.

@Yb[h. ; YbYfU'mUfci bX" \$\$'k cfXg'Zcf'YUW'V'c["

8YHJ]`g. 'K YY_'mig\cfhk f]hYb'gi a a Uf]Yg'Zcf'X]ghUbW'UbX'cb!WJa di g'gh XYb'gžk]h'g\cfhcb']bY
ZYXVUW_[]j YbžZcf'%'k YY_g'r' '\$\$'k cfXg'dYf'k YY_

5XX]h]cbU'XYHJ]`g.

Hcd]Wg'Zcf'mci f'V'c[g'k]''VY'YghUV]g\YX'YUW'k YY_žUbX'k]''fY'UH'hc'mci f']bXYdYbXYbh'fYgYUfW"

Gi Va]gg]cb'bchYg.Gi Va]hk YY_'mj]U'mci f'A ccX'Y'g]hY

Hi fb]h]b'gYH]b[. H\]g]g'bchU'Hi fb]h]b'Ugg][ba Ybh

5ggYgga Ybh&. :]Y'X'5gg][ba Ybh

GhUfhXUH'. 'b hY'Zfgh'hfY'k YY_g'cZH'Y'Wci fgY

@Yb[h. %\$\$\$'k cfXg

8YHJ]`g. 'Gh XYb'g'k]''VY'fYei]fY'hc'gi Va]hU%'\$\$\$'k cfX'fYdcfhVUgYX'cb'U'Z]Y'X'Ugg][bYa Ybh

Gi Va]gg]cb'bchYg.Mci f'dfcdcgU'Zcf'mci f'Z]Y'X'k cf_'k]''VY'cbY'cZmci f'V'c[g"H\Y'Z]bU'fYdcfhk]''VY
gi Va]hY'X'j]U'mci f'A ccX'Y'g]hY

Hi fb]h]b'gYH]b[. H\]g]g'bchU'Hi fb]h]b'Ugg][ba Ybh

5 WUXYa]W<c bYghmiUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`h`Y`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[`h`Ya `Ug`mci f`ck b" `h`WUb`hU`Y`a Ubm
Zcfa gž`Zca `XY`]VYfUh`W`YU]b[`h`UW]XYbhU`miW`dm]b[`Zca `U`gci fW`k]h`ci hUW_bck `YX[Ya Ybh`

I BGK `[fci dg`d`U[]Uf]ga `]b`h`Y`Zc`ck]b[`W]hY[cf]Yg.

7 cdm]b[.`i g]b[`h`Y`gUa Y`cf`j Yfmg]a]Uf`k cfXg`h`h`Y`cf][]bU`hI hcf]XYU`k]h`ci hUW_bck `YX[]b[`h`Y

5 WUXYa]WbZcfa Uhcb`

: cfYggYbh]U`ghi XYbh]bZcfa Uhcb`fY`Uh]b[`hc.

- fYei Yghg`ZcfYI hYbg]cb/
- `Uhr`gi Va]gg]cbg`[i]XY`]bYg/
- fYj]Yk `cZa Uf_g/
- I B GK `<YU`h`UbX`GUZY`midc`]WYg/
- YI Ua]bUh]cb`dfcVWXi fYg/
- gdYW]U`Wc]bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybhi fY/
- ghi XYbhYei]hmUbX`X]gUV`]`hm/
- UbX`chYf`YggYbh]U`UWUXYa]W]bZcfa Uhcbz`gYY

[\hfdg.#k k k "Ufng"i bgk "YXi "Ui #W ffYb\]h\]ghi XYbh\]bZcfa Uhcb`#dfchWc`g`\[i \]XY`\]bYg#](#)

⇒ U[Y`7fYX]h

6UfUb[Ufcc.`GmXbYmf]i fVUb`fY!XYj Y`cda YbhWXU`Yb[Yg`i g`hc`h]b_`UVci hUXUdh]j Y`UbX`dUfh]W]dUrcfm Ybj]fcba Yb]U`a UbU[Ya Ybh]b`hY`ZJW`cZdfYgg]b[`Ybj]fcba Yb]U`]ggi Yg`-`ck`hc`Wc]b]U]b`UbX`fYUh Wc]b]Ua]bUhYX`]bXi gh]U`g]hYgž`ck`hc`h]U_Y`UW]c`i bhczW`h`fU`Yf]U[Y`]bW] X]b[`bX]] Ybci g`Yf]U[Y`UbX]bXi gh]U`g]hcfnz`ck`hc`Yb[U[Y`f]i V`]W]f]b`Ybj]fcba Yb]U`XYW]g]cb]a U_]b["D`chc[fUd`VmDUi`6fck b"

7F ⇒ CG

7F ⇒ CG`Dfcj]XYf`7cXY.`\$\$\$- ;