



IEST5012

9bj]fcba YbH`A UbU[Ya YbhDfc YWwDudYf

HYfa `H\fYY`##`&\$&\$

7 ci fgY`Cj Yfj]Yk

GHJZZ`7 cbhJWw`8YhU]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cW]h]cb	D\cbY
HYa U`A]`ghY]b	hYa U"a]`ghY]b4 i bgk "YXi "Ui	6mUddc]bha Ybh Xi f]b[`Wcbgi `hU]cb \ci fg fK YXbYgXUmž%% U"a "!"%&"d"a "L	A cfj Yb`6fck b ' * (`fcb]cb]bY j]U`HYUa g`Xi Y hc `X]ghUbW `YUfb]b[`cf 7cj]XŁ	

GWXcc``7cbhJWw`bZcfa Uh]cb

GWXcc``cZ<i a Ub]h]Yg`UbX`@Ub[i U[Yg

@cW]h]cb. `GWXcc``C Z]W]žA cfj Yb`6fck b`6i]X]b[ž@Yj Y``ž&),

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

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

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg`%&`

Gi a a UfmicZ`h`Y'7 ci fgY

H\Y'[cU`cZ`h]g`W`i fgY`]g`h`c`YbUV`Y`g`h`XYbHg`h`k`f]h`U`gi`dYfj`]gYX`Ybj`]fcb`a`YbH`U`a`UbU[Ya`Ybh`fYgYUfW`
dUdYf`H\]g`fYgYUfW`W`i`Xz`Vi`hXcYg`bch`Uj`Y`h`VYz`VUgYX`cb`a`U`h`f]U`[`U`h`Y`fYX`Xi`f]b[`h`Y`
9bj`]fcb`a`YbH`U`A`UbU[Ya`Ybh`F`YgYUfW``b`h`f`b`g`\]d`f`H`G`H)`\$\$(`L`H\Y`W`i`fgY`XcYg`b`c`h`a`U]b`H]b`fY[i`U`f`m`
g`W`X`Y`X`i`Y`X`W`U`g`g`Y`g`<`c`k`Y`j`Y`f`z`g`h`X`Y`b`h`g`U`f`Y`f`Y`e`i`]f`Y`X`h`c`d`U`f`h`W`d`U`h`Y`]b`c`f`U`d`f`Y`g`Y`b`h`U`h`c`b`g`c`b`h`Y`d`f`c`Y`W`h`
d`U`d`Y`f`g`h`c`k`U`f`X`h`Y`Y`b`X`c`Z`h`Y`h`Y`f`a`" `H\`f`c`i`[` \`c`i`h`h`Y`h`Y`f`a`c`Z`h`Y`d`f`c`Y`W`z`g`h`X`Y`b`h`g`k`]`V`Y`k`c`f`_`b[`k`]h`c`b`Y`
c`f`a`c`f`Y`a`i`h`i`U`m`U[fYX`i`dcb`U`W`U`X`Y`a`]W`g`i`d`Y`f`j`]g`c`f`g`k` \`c`k`]`f`Y`j`]Y`k`d`f`c[fYg`g`h`c`k`U`f`X`h`Y`Z]b`U`d`f`c`Y`W`h`
d`U`d`Y`f`X`c`W`a`Y`b`h`H\]g`W`i`fgY`]g`Uj`U]UV`Y`Vm`X]g`h`U`b`W`g`h`X`m`

7 ci fgY`@YUfb]b[`C`i`h`W`c`a`Y`g

%`5`d`d`m`i`f`Y`g`Y`U`f`W`a`UbU[Ya`Y`b`h`g`_]`g`h`c`U`b`c`f][]bU`f`Y`g`Y`U`f`W`d`f`c`Y`W`h`
&`5`b`U`m`g`Y`U`b`X`]b`h`f`d`f`Y`h`f`Y`g`Y`U`f`W`X`U`h`U`"
'`7`c`a`a`i`b`]W`U`h`Y`f`Y`g`Y`U`f`W`Z]b`X`]b[`g`]b`k`f]h`Y`b`U`b`X`c`f`U`Z`c`f`a`U`h`g`"

HYUW`X`]b[`G`h`f`U`h`[`]Y`g`

H\]g`W`i`fgY`U]a`g`h`c`YbUV`Y`g`h`XYbHg`]b]XYd`h`U`b`X`c`f][]bU`f`Y`g`Y`U`f`W`h`h`f`c`i`[` \`h`Y`k`f]h]b[`c`Z`U`f`Y`g`Y`U`f`W`
d`U`d`Y`f`i`b`X`Y`f`h`Y`g`i`d`Y`f`j`]g]c`b`c`Z`c`b`Y`c`f`a`c`f`Y`a`i`h`i`U`m`U[fYX`i`dcb`U`W`U`X`Y`a`]W`g`i`d`Y`f`j`]g`c`f`g`k` \`c`k`]`
g`i`d`d`c`f`h`h`Y`X`Y`j`Y`c`d`a`Y`b`h`c`Z`h`Y`Z]b`U`d`f`c`Y`W`h`d`U`d`Y`f`X`c`W`a`Y`b`h`H\Y`X]f`Y`W`Y`X`g`i`d`Y`f`j`]g]c`b`g`h`f`U`h`[`m]b`h`Y`
W`i`fgY`U]a`g`h`c`X`Y`j`Y`c`d`f`Y`g`Y`U`f`W`g`_]`g`U`b`X`a`Y`h`c`X`g`z`h`Y`U`a`k`c`f`_`U`b`X`]U]g`c`b`k`]h`U`d`U`f`b`Y`f`c`f[`U`b]g`U`h`c`b`
f`k` \`Y`f`Y`f`Y`j`U`b`h`z`U`b`X`f`Y`g`Y`U`f`W`d`f`Y`g`Y`b`h`U`h`c`b`g`_]`g`" `H\]g`W`i`fgY`]g`Uj`U]UV`Y`Vm`X]g`h`U`b`W`g`h`X`m]b`k` \`]W`
g`h`X`Y`b`h`g`U`f`Y`g`i`d`Y`f`j`]gY`X`X]f`Y`W`h`m`V`m`U`b`U`W`U`X`Y`a`]W`g`i`d`Y`f`j`]g`c`f`"

5ggYgga Ybh

H\]g`dfc`YWhfYei]fYg`]b]hUhj Y`UbX`gY`ZX]fYWYX`YUfb]b[`cb`hY`dUfhcZ`hY`gh`XYbh]b`V`bgi`hU]cb`k`]h`hY]f`W`cgYb`UbX`U[fYX`i`dcb`UWUXYa]WghUZZgi`dYfj`]gcf`Zcf`hY`dfc`YWh`5ggYgga`YbhYI`dYWU]cbg`UfY`k`cf`_YX`ci`hU]hY`ghUfhcZ`hY`hYfa`cbY!cb!cbY`VYtk`YYb`hY`gh`XYbhUbX`hY]f`gi`dYfj`]gcf`K`Y`fYW`a`a`YbX`hY`gh`XYbhV`b`hUW]9bj`]fcb`a`YbhUbX`GcWY]mi;`fci`d`UWUXYa]W]rc`VY`dchYbh]U`gi`dYfj`]gcf`g`k`^c`]g`U[`ccX`Z]hZcf`hY`gdYW]Z]W_]bX`UbX`ZcW`g`cZfYgYUfW`hY`gh`XYbhk`Ubhg`hc`i`bXYfhU`Y"

5ggYgga YbhHUg_g`

5ggYgga YbhHUg_	K Y][\h	8i Y`8UH`	Gh`XYbh`@YUfb]b[`C`i`hW`a`Yg`5ggYggYX`
Dfc`YWh`6f]YZ`	;%\$i	B`ch5`dd`]WUV`Y`	%z&
C`fU`D`fYg`Yb]h]cb`	`\$i	B`ch5`dd`]WUV`Y`	%z&Z
:`]bU`fYdcfhi`	*\$i	B`ch5`dd`]WUV`Y`	%z&Z

5ggYgga Ybh8YH]`g`

5ggYgga`Ybh`%`Dfc`YWh`6f]YZ`

GhUfhXUH`. `B`ch5`dd`]WUV`Y`

8YH]`g`.

5`)`\$\$!`k`cfX`Vf]YZk`^]W`]bW`XYg`U`VUg]Wci`h]bY`cZ`hY`Ufh]WY`hc`VY`XYj`Y`cdYXz`hY`dchYbh]U``ci`fbU`f]gE`Zcf`]h`hc`VY`gi`Va`]hYXz`hY`h]a`Y`]bY`Zcf`XUH`UbU`mg]g`UbX`k`f]h]b[`z`XYH]`g`cZk`cf`_`gh`hc`VY`V`bXi`WYX`" `X]j`]Xi`U`k`f]hYb`ZYXVUW`dfcj`]XYX`"

5XX]h]cbU`XYH]`g`.

Dfc`YWh`XYH]`g`hc`VY`k`cf`_YX`ci`hcbY!cb!cbY`VYtk`YYb`hY`gh`XYbhUbX`hY]f`U[fYX!i`dcb`UWUXYa]WghUZZ`gi`dYfj`]gcf`"

5ggYgga`Ybh`&.`C`fU`D`fYg`Yb]h]cb`

GhUfhXUH`. `B`ch5`dd`]WUV`Y`

8YH]`g`.

`X]j`]Xi`U`%`!`a`]bi`hY`c`fU`d`fYg`Yb]h]cb`c`ZfYgYUfW`dfc`YWh` `b!`WUgg`ZYXVUW`dfcj`]XYX`"

5XX]h]cbU`XYH]`g`.

8YH]`g`hc`VY`k`cf`_YX`ci`hcbY!cb!cbY`VYtk`YYb`hY`gh`XYbhUbX`hY]f`U[fYX!i`dcb`UWUXYa]WghUZZ`gi`dYfj`]gcf`"

5 hYbXUbW F YeI]fYa YbHg

Gh XYbHg UfY gHfcb [mYbWci fU[YX hc UHhYbX U WUggYg UbX fYj]Yk YW h fY fYW fX]b[g"

7 ci fgY GWXYXi Y

[J Yk WUgg hja YhUV Y](#)

H]a YhUV Y

8 UhY	HmdY	7 cbhYbh
C K YY_ , GYdhYa VYf! - GYdhYa VYf	Dfc YW h	5 k YY_ mgWXYXi Y]g bchdfcj]XYX \YfY "8 i f]b[cf VYzcfY hY Zfghk YY_ cZHYfa z hY gW dY cZ hY dfc YW h bY YXg hc VY XY h fa]b YX VY h Y Y b mci UbX mci f U[fY YX i dcb UW X Ya]W g h U Z gi dY f j]gc f "5 c h Y f g W X Y X i]b [Ub X f Y e i]f Y a Y b H g Z c k Z f c a h]g Y U f m Y g h U V]g \ a Y b h c Z h Y d f c Y W h

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

Hc`VY`XYHfa]bYX`]b`Wcbgi`hU]cb`k]h`mci`figi`dYfj]gcffgk

F YWca a YbXYX`F Ygci fWg

Hc`VY`XYHfa]bYX`]b`Wcbgi`hU]cb`k]h`mci`figi`dYfj]gcffgk

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

DfYj]ci`g`ghi`XYbhg`\Uj`Y`j`U`i`YX`h`Y`fYgYUfW`dfc`YVhUg`Ub`cddcfh`b]m]h`fYW]j`Y`a`Yb]cf]b[`]b`fYgYUfW

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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Ẓmci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UHYa 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'ngi 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'mYUfI" Ẓmci
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 UmiUdd'mZcf'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'UbmicH'Yf'fY'Yj UbhXcW a YbfgL'hc
]bWi XY'Ug'Yj]XYbW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'jW]h]cb" Ẓmci 'Ya U]'9I HYfbU'Gi ddcfhmc i 'k]`

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`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]]hYg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi WñUbX'5WwdfUV'Y'I gY'cZ
I BGK '⇒H'F Ygci fW'g'Dc`]Wñ

