

EDST5321

A chj Uhcb 'jb '9Xi WWhcbU`GYHj]b[g

HYfa &Z&\$&&



7 ci fgY`Cj Yfj]Yk`

GhJZZ'7 cbhJWw'8YhU]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWWhcb	D\cbY
9`Yb`@YY	\YYa]b"YY4 i bgk "YXi "Ui		A cfj Yb 6fck b	

GW\cc`7 cbhJWw' bZcfa Uh]cb

GW\cc`cZ9Xi WWhcb

5ftgž8Yg][b`UbX'5fW\]hYWhi fY

; fci bX: `ccfžA cfj Yb'6fck b'6i]X]b[`fi &\$Ł

H. `Ž *%f&Ł'-' ,) `%- ++

9. YXi WWhcb4 i bgk "YXi "Ui

K . \hhdg.## k k "Uftg"i bgk "YXi "Ui #YXi WWhcb

5W_bck`YX[Ya YbhcZ7ci bHfm

I B G K `5fngž8Yg][b`UbX`5fWk]HfWfi fY? Ybg]b[hcb`UbX`DUXX]b[hcb`Wla di gYg`UfY`Vi]hcb`5Vcf][]bU`
@UbXg"K Y`dUmci f`fYgdYWtg`hc`hY`6]X}[U`UbX` ; UX][U`dYcd`Yg`k`c`UfY`hY`7i`gfcX]Ubg`cZ`hY`gY`UbXg"
K Y`UW_bck`YX[Y`hY`5Vcf][]bU`UbX`Hc`fYg`G`fU]h`g`UbXYf`dYcd`Ygž`hY` :]fgh5i`gfcU`]Ubgžk`c`gY`UbXgž
k]bXg`UbX`k`UHf`g`k`Y`U`bck`g`UfYž`UbX`dUm`fYgdYWfi`hc`hY`f`i`b]ei`Y`j`U`i`Ygž`UbX`hY`f`W`b`h`bi`]b[`UbX
YbXi`f]b[`W`h`fYg`k`\\]W`XYYdYb`UbX`Yb`f]W`hY`Z`cZci`f`b`U`h`cb`UbX`W`a`a`i`b`h`Yg`"

U[Y`W`ci`f`h`g`m`c`Z`h`Y`C`Z]W`c`Z`h`Y`D`f`c`J`]W`!`7`Ub`W`c`f`b`X][Ybci`g`[L`B`G`K`f`g`b`X\]\[Ybci`g`g`f`U`h`\[`m](#)

5ggYgga Ybh

5ggYgga YbhUg_	K Y][\h	8i Y'8UH	7ci fgY'@YUfb]b[Ci hWca Yg'5ggYggYX
%'5bbchUHx'V]V`]c[fUd\m) \$i	DUfh% '&#*\$* #&\$&&') .\$\$DA / DUfh&.'%- #+\$+#&\$&&') .\$\$DA`	%ž&
&"A chj Uh]cb`fYdcfh) \$i	%&#\$, #&\$&&\$) .\$\$`DA	%ž'&ž'

5ggYgga Ybh%'5bbchUHx'V]V`]c[fUd\m

8i Y'XUH. 'DUfh% '&#*\$* #&\$&&') .\$\$DA /DUfh&.'%- #+\$+#&\$&&') .\$\$DA`

HUg_ '%5bbchUHx'V]V`]c[fUd\m

@Yb[h. '&) \$\$'k cfXg

E i U']h]j Y'UbX'ei Ubh]h]j Y'ZYXVUW`dfcj]YX'cb`]bY'h'fci [\ `Wci fgY'k YVg]h'k]h]b`%\$'XUm]cZ
gi Va]gg]cb"

5XX]h]cbU`XYH]`g

DfYgYbhUb'UbbchUHx'V]V`]c[fUd\m]cZgci fWg'dfcj]YX'cb]bW X]b['gca Y'cZmci f'Wccg]b["H\Y'di fdcgY'cZ
hY'UbbchUHx'V]V`]c[fUd\m]g'hc'UWci U]bh]mci 'k]h' hY'Y'Ya YbhUfmiUgdYWg'cZa chj Uh]cb'UbX'hY`]'h'fUhi fY
UggcWUHx'k]h'a chj Uh]cb`]b'YXi WUh]cbU`gYH]b[g"

H\Y'UbbchUHx'V]V`]c[fUd\m]g'Wca d'YHx'`]b'hc'c'gYdUfUH' dUfhgžgc'h'UhZYXVUW`Zfca 'hY'Z]fghdUfhW]b
\Y'd'mci `Wca d'YH' hY'gYWcbX'dUfh'

GYY'A ccX'Y'Zf'Z fhYf'XYH]`g'cb`\ck`hc'Wca d'YH'hY'UbbchUHx'V]V`]c[fUd\m'

5ggYgga Ybh&.'A chj Uh]cb`fYdcfh

8i Y'XUH. '%&#\$, #&\$&&\$) .\$\$`DA

HUg_ '&.'A chj Uh]cb`fYdcfh

@Yb[h. '&) \$\$'k cfXg

E i U']h]j Y'UbX'ei Ubh]h]j Y'ZYXVUW`dfcj]YX'cb`]bY'h'fci [\ `Wci fgY'k YVg]h'k]h]b`%\$'XUm]cZ
gi Va]gg]cb"

5XX]h]cbU`XYH]`g

F Ydcfh'hc'U'gWcc'žgYW'hc'f'X]gh]Wž['cj Yfba YbhXYdUfha Ybž'cf'chYf'cf[Ub]gUh]cb`VUgYX'cb'mci f'UbU`ng]g

WŁa a i b]WUjcbgžcf'chYf'gWŁcc`cZ]WU`cf'dc`JWnXcW a YbHg"H\Y'fYdcfHg\ci `X'VY'k f]Hb'Ug'hŁci [\`mci
UfY'U'WŁbgi `hUbhZcf'hY'gWŁcc`"

GUa d`Y'gWbUf]cg'UbX'XUHU'k]`VY'dfcj]XYX']b'hY'WUgY'hUhmci f'k cf_d`UW'cf'dfYj]ci g'k cf_d`UW'g'UfY
bchgi]hUV`Y"

GYA' A ccX'Y'Zcf'Z f'hYf'XYhU]g'cb`\ck 'h'WŁa d`Y'h'hY'gWŁcc`a chj Uhcb'fYdcfH'

F
9
1
5

GdYWZjW7 f]hYf]U	f]k ————— 2fZk				
DfYgYbHh]cb`cZfYgdcbgY`UWwcfX]b[`hc`Uddfcdf]UH`UWUXYa]WUbX`]b[i]gh]Wwcbj Ybh]cbg <ul style="list-style-type: none"> • 5ddfcdf]UH`fY[]ghf`Zcf`UWUXYa]WwcfZ]gg]cbU`9b[`]g\ • F YZfYbWg`W]hX`Uddfcdf]UH`m 					
; YbYfU`Wca a Ybh]f]Wca a YbXUH]cbg`Zcf`bYI h]ja Y.`					

F YWca a YbXYX. #&\$`f] @`DG`7F`8B`<8k K Y][\h]b[.) \$i

B 6. H\Y`h]W_g`]b`h\Y`j Uf]ci g`Vcl Yg`UFY`XYg][bYX`hc`dfcj]XY`ZYXVUW`hc`gh`XYbhg/h\YmUFY`bch[]j Yb
 Yei U`k Y][\h]b`XYh]fa]b]b[`h\Y`fYWca a YbXYX`[fUXY`"8YdYbX]b[`cb`h\Y`bUh`fY`cZ`h\Y`UggYgga Ybh]Ug_ž
 `YW`fYfg`a UmU`gc`Wcb]h]i h`U`]gY`UbX`#`f`Ua`YbX`h\YgY`gdYWZjWw]hYf]U`H\Y`fYWca a YbXYX`[fUXY`]g
 h]bh]h] Y`cb`mž`gi`V`YW`hc`gh]UbXUfX]gUh]cb`dfcW]ggYg`UbX`Uddfc] U`Vm`h\Y`GV]cc`cZ9Xi W]h]cb`@YUfb]b[
 UbX`HYUW]b[`7ca a]h]Y`"

Gi Va]gg]cb 'cZ5ggYgga YbhiHUg_g

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

≠mci 'YbWci bHYf'U'dfcV'Ya 'k \Yb'UHYa dh]b['hc'gi Va]hmc i f'Ugg][ba YbhiHfci [\ 'Hi fb]h]bž'd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-',) " ' ' %cf'Ya U] 'H'Ya 'cb'YI HYfbU'HY'hgi ddcfh4 i bgk "YXi "Ui "'Gi ddcfh
\ci fg'UFY', .\$\$Ua '—%\$.\$\$da 'cb'k YY_XUmg'UbX'-. \$\$Ua '—) .\$\$da 'cb'k YY_YbXg'fl *) 'XUmg'U'mYUfl" ≠mci
UFY'i bUV'Y'hc'gi Va]hmc i f'Ugg][ba YbhiXi Y'hc'U'ZUj 'hk]H'Hi fb]h]b'mci 'a UmUdd'm'Zcf'Ub'YI HYbg]cbž'Vi hmc i
a i ghfYHU]b'mci f'h]W_Yhbi a VYf'Z'ca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'fY'Yj UbhXcW a YbHg'k'hc
]bWi XY'Ug'Yj]XYbVW'hc'gi ddcfhmc i f'YI HYbg]cb'Udd'j]W]h]cb" ≠mci 'Ya U] '9I HYfbU'Gi ddcfhmc i 'k]`
Ui 'ca UH]WU'mfYW]j Y'U'h]W_Yhbi a VYfž'Vi h]Zmci 'HY'Yd\cbY'mci 'k]`bYYX'hc'gdYW]Z]WU'mUg_ 'Zcf'cbY"
Hi fb]h]b 'U'gc'dfcj]XYg'i dXUH'g'cb'H'Y]f'gmghYa 'ghUhi g'cb'Hk]HYf"

; YbYfU'mž'UggYgga YbhiHUg_g'a i ghVY'gi Va]HYX'Y'YWfcb]WU'mj]U'Y]H'Yf'Hi fb]h]b'cf'U'A ccX'Y
Ugg][ba YbH' 'b]bgHUbVW'g'k \YfY'H'lg]g'bcHdcgg]V'Yž'hk]`VY'ghUH'X'cb'mci f'Wci fgY'g'A ccX'Y'g]HY'k]H
U'HYfbUH] Y'gi Va]gg]cb 'XYHU]g"

: cf]bZ'fa UH]cb'cb'\ck 'hc'gi Va]hUgg][ba YbHg'cb]bY'j]U'A ccX'Y. \hhdg.#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['hY'k cfXg'cf]XYUg'cZcH.Yfg'UbX'dfYgYbh]b['hYa 'Ug'mci f'ck b" #WUb'fU_Y'a Ubm
Zcfa gZ'Zca 'XY'jVYfUHY'WX.YU]b['hc'UW]XYbhU'mWcdm]b['Zca 'U'gci fW'k]h'ci hUW_bck`YX[Ya Ybh'

I BGK '[fci dg'd`U[]Uf]ga]bhc'hY'Zc`ck]b['WUHY[cf]Yg.

7cdm]b[. 'l g]b['hY'gUa Y'cf'j Yfmg]a]Uf'k cfXg'hc'hY'cf][]bU'HYI hcf]XYU'k]h'ci hUW_bck`YX[]b['hY
gci fW'cf'i g]b['ei chU]cb'a Uf_g" 'H\]g']bW' XYg'Wcdm]b['a UHYf]U'gZ]XYUg'cf'WcbW'dhg'Zca 'U'Vcc_ž'Ufh]WYž
fYdcfhcf'ch.Yf'k f]HYb'XcW'a Ybž'dfYgYbhU]cbž'Wca dcg]h]cbž'Ufh'cf_žXYg][bž'XfUk]b[ž'W]fW]fmx'Wca di hYf
dfc[fUa 'cf'gcZk UfYžk YVg]hYž]bHYfbYhž'ch.Yf'Y'YVfcb]WfYgci fW'ž'cf'Ubch.Yf'dYfgcb]Ugg][ba Ybhk]h'ci h
Uddfcd]UHY'UW_bck`YX[Ya Ybh'

#Uddfcd]UHY'dUfUd\ fUg]b[. '7 \Ub[]b['U'Zk 'k cfXg'UbX'd\ fUgYg'k \]Y'a cghmifYU]b]b['hY'cf][]bU'
]bZcfa U]cbž'gh' W' fY'UbX#cf'dfc[fYgg]cb'cZ]XYUg'cZcH.Y'cf][]bU'k]h'ci hUW_bck`YX[Ya Ybh' 'H\]g'U'gc
Udd'jYg']b'dfYgYbhU]cbg'k \YfY'gca YcbY'dUfUd\ fUgYg'Ubch.Yf'g']XYUg'cf'k cfXg'k]h'ci hWfYX]hUbX'hc
d]YW]b['hc[Yh.Yf'ei chYg'UbX'dUfUd\ fUgYg']bhc'U'bYk 'k \c'Yžk]h'ci hUddfcd]UHY'fYZfYbW]b["

7c`i g]cb. 'K cf_]b['k]h'ch.Yfg'Vi hdUgg]b['cZcH.Y'k cf_'Ug'U'dYfgcb'g']bX]]Xi U'k cf_"7c`i g]cb'U'gc
]bW' XYg'dfcj]X]b['mci f'k cf_'hc'Ubch.Yf'gh' XYbh'Zc'f'hY'di fdcgY'cZcH.Ya 'd`U[]Uf]g]b[ž'dUm]b['Ubch.Yf'
dYfgcb'hc'dYfZcfa 'Ub'UWUXYa]W]Ug_ž'gh'U']b['cf'UW'ei]f]b['Ubch.Yf'dYfgcb'g'UWUXYa]Wk cf_'UbX'Wcdm]b[

5 WUXYa]W=Zcfa Uh]cb

8i Y`tc`Yj`c`j`]b[`UXj`]W`VmB`GK` `<YU`h`z`gh`XYbh`a`i`gh`WXYW`_`Zc`f`i`dXU`h`X``]bZcfa`Uh]cb`fY[`UfX]b[`cb`]bY`
`YUfb]b[`Zc`f`U`"5`f`g`z`8`Y`g][`b`UbX`5`f`W`X`]h`W`h`f`Y`W`e`i`f`g`Y`g`h`g`h`f`a`f`j`]U`A`ccX`Y`c`f`W`e`i`f`g`Y`]bZcfa`Uh]cb`
dfcj`]XYX"Ł

: cf`YggYbh]U`gh`XYbh]bZcfa`Uh]cb`fY`Uh]b[`tc.

- fYei`Yg`h`g`Zc`f`YI`h`b`g]cb/
- `UH`g`i`Va`]gg]cbg`[`i`]XY`]bYg/
- fYj`]Yk`cZa`Uf_g/
- I`B`G`K` `<YU`h`UbX`GUZ`h`m`d`c`]W`Y`g/
- YI`Ua`]bUh]cb`dfc`W`X`i`f`Y`g/
-