



ARTS1900

; YbXYfYX'K cfXg. ðhfcXi Wjcb'hc'K ca Ybfg'UbX'; YbXYf
Gh X]Yg

HYfa 'H\fYY'##'&\$%-

7ci fgY'8YHJ]`g

7fYX]hDc]bHg`*`

Gi a a UfmcZh\Y'7ci fgY

Gi VYWh5fYU.`

5ggYgga Ybh

F Yei]fYa Ybtg Zcf K f]Hb K cf

Gi Va]gg]cb

Hi hcf]U`fYgdcbgYg`UbX`fYgYUfVX`YggUmg`g\ci`X`VY`gi Va]HfX`Y`YWfcb]WU`mhc`Hi fb`#`#`cb`A ccX`Y`

F YZYfYbW]b[

5`k f]Hb`k cf`_a i ghVY`cf][]bU`f]Y`"bchd`U[]Uf]gYXk`UbX`dfcdYf`mFYZYfYbW`X`i`g]b[`C B 9`fYWk`[b]gYX`fYZYfYbW]b[`gmghYa`fY"[""C I ZcfX`cf`< Ufj UfXk`Vi`hbchU`Wk`a V]bU]hcb`cZgmghYa`g`"H\Y`dfYZYfYbW`i]g`Zcf`Zc]hcbY`gmghYa`-`C I ZcfX`cf`7`\\W]`c"

GYY: [\hdg.##gh.XYbhi.bgk`YXi`"Ui`#cchbchY!V\]V\]c\[fUd\mcf\]cl`ZcfX!fYZYfYbW\]b\[!gmghYa`](#)

CF.

[\hdg.##gh.XYbhi.bgk`YXi`"Ui`#Ufj`UfX!fYZYfYbW\]b\[](#)

#!hYI hfY[""GHUfbg`&\$%)`zd`"%`k`]g`c`_Umdfcj`]XYX`]h]bW] XYg`U`dU[Y`bi`a`VYf`5B8`U`fYZYfYbW`i]gh`

H]d. `K` \Yb`]b`Xci`VhZ`fYZYfYbW`":`cchbchY`gZ`Zcf`YI`Ua`d`Y`Z`UfY`bchicb`mZcf`X]fYW]h`ei`chU]hcbg`Vi`hU`gc`Zcf`]bg]UbW]g`]b`k` \]W]`mci`d`UfUd`fUgY`h`Y`k`cf`_`cZchYf`gW]c`Ufg`

H]d.:`cchbchY`g[`c`]b`g`Yei`YbW]Z`Vi`hg`ci`X`b`Yj`Yf`VY`d`UW]X`b`YI`h`hc`YUW]`c`h`Yf`%Q&Q=Z`mci`k`Ubh`hc`fYZYf`h`k`c`gci`fW]g`UhcbY`dc]b]hZ`]bgYf]hcbY`Zc]hcbY`UbX`h`Yb`XYgW]VY`Vch`gci`fW]g`O`Q`

H]d. `K`]h`U`Zc]hcbY`Z`Z]fgh`h`Yb`gi`fb`Ua`Y`" `#`U`V]V]c[fUd`n`#fYZYfYbW`i]ghZ`Uff`Ub[Y`]b`U`d`UVYh]WU`c`fXYf`Vm`gi`fb`Ua`Y`

: cfa UH]b[

5`k f]Hb`k cf`_a i ghVY`dfcdYf`mZcf`a`UHfX.

%)`cf`Xci`V`Y`gd`UW]X`"

%&dc]bhZc]bh]f]fYZYfUv`m`Ub`Y`Ugm]hc`fYUX`Zc]bhgi`W`U`g`H]a`Yg`B`Yk`f`ca`Ub`k`F`Y`U`g`cb`UV`Y`a`Uf[]bg`"

QDYHf`B`"GHUfbgZ;`YbXYf`]b`K`cf`X`<`]g]hcfmZ`"fX`Y`X`b`"B`Y`k`M`cf`_`F`ci`h`Y`X`[`Y`Z`&`\$`%)`Z`d`" `%` `Q`&`#`W`k`ff`Y`W`i`GYY`Zc]hcbY`" `"

O`QDYHf`B`"GHUfbgZ;`YbXYf`]b`K`cf`X`<`]g]hcfmZ`"fX`Y`X`b`"B`Y`k`M`cf`_`F`ci`h`Y`X`[`Y`Z`&`\$`%)`Z`d`" %` />c`Ub`k`" `G`W`k`hZ`;`YbXYf`.5`i`g`YZ` ``7`UHf[`c`f`m`c`Z`<`]g]hcf]WU`i`5`b`U`mg]g`Z`5`a`Y`f]W]b`<`]g]hcf]WU`f`Y`j`]Y`k`Z`-`%)`Z`%-` ,`*`Z`dd`" %`\$`)'`!`%`\$`+`)'`Z`d`" %`\$`)(`

5ggYgga YbhHUg_g`

5ggYgga YbhHJg_	K Y][\h	8i Y`8UH`	Gh XYbh@YUfb]b[Ci hWta Yg`5ggYggYX
Hi hcf]U`F YgdcbgYg`	(\$	Bch5dd`]WV`Y	%z&
F YgYUfW`YggUm	(\$	\$\$#%#&\$%- `\$(. \$\$`DA	%z&Z
7`Ugg`hYghi	&\$	@Ughh hcf]U`	&Z

5ggYgga Ybh8YhJ]`g

5ggYgga Ybh%`Hi hcf]U`F YgdcbgYg

GHUfhXUH`. Bch5dd`]WV`Y

@Yb[h. ` \$\$(\$\$(k cfXg`YUW

8YhJ]`g.

@Yb[h. B #5

8YHJ]g. Gh XYbfg]g]hU`WUgg`hYgh]b`hY`Z]bU`h`hcf]U`"H\Y`hYghk`j`]bWl XY`a`i`hd`Y`Wlc]W`UbX`U`g\cfh
YggUmUbX`k`j`hYgh_bck`YX[Y`cZ`hY`Wci`fgY`Ug`U`k`c`Y`Gh`XYbfg`k`j`fYW]j`Y`U`[fUXY`j`]U`A`ccX`Y`k`]h]b
hYb`XUmg`cZg]h]b[`hY`hYgh`

5XX]h]cbU`XYHJ]g.

<]bh`NcfU`k`j`X]gW`gg`hY`hYgh]b`hY`Ugh`YWl`fY`cZ`hY`Wci`fgY`"H\]g]g`U`WcgYX`Vcc_`hYghz`]"Y`"mci`WUbbch
hU`Y`]b`bchYg`"Zmci` \Uj`Y`VYYb`UthYbX]b[#]ghYb]b[`h`YWl`fYg/g]hUm]b[`cb`hcd`cZ`hY`fYUX]b[`UbX`"ghYb]b[
#k`UHX]b[`hY`Yl`hUg`mci`k`j`VY`Z]bY`

Gi Va]gg]cb`bchYg.9l Ua `Vcc_`Yhk`j`VY`dfcj`]XYX"

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

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

A ccXY#@Y[Ubhc`k]``\Uj`Y`Yj`Yfnt\]b[`mci`bYYX`

DYhf`GHUfbg`9 W VWd[`I` adV : [efack`fj`Uf]ci`g`YX]h]cbgk]g`U`i`gYZ` ``]bhfci Xi W]cb`!`Uj`U]`UV`Y`j`]U``]VfUfm
WUHU`c[i`Y`Ug`Ub`Y!Vcc_

BchY. `YUWk`k`YY_`k`]``]bWf`XY`fYgci`fWg`dfYgYbH`X`]b`Ub`U`h`fb`U`h`j`Y`Zc`fa`Uh!`dcXWUgh`#XcWc`#Z`a`Y`hW!
h`YgY`k`]``VY`Uj`U]`UV`Y`cb`A`ccX`Y`UbX`Y`Zc`fhg`l`ci`X`VY`a`UXY`hc`]bWc`fdcf`U`h`h`]g`a`U`h`f`U``]bhc`mci`f`
UggYgga`Ybhz`YgdYWU`m`hi`hc`f]U`fYgdc`bgYg`UbX`WUgg`h`Ygh`

F YWca a YbXYX`F Ygci fWg

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

5h5F`HG%-`\$\$zk`Y`h`U`_`Y`gh`XYbhZ`YXVUW`_`j`YfmgYf]ci`g`m`UbX`i`gY`A`m9I`dYf]YbW`UbX`ch`Yf`Zc`fi`a`g`hc`
Wc`bg`h`U`b`h`m`]a`dfcj`Y`h`Y`Wc`i`fgY`"H`]\g`m`Y`Uf`k`Y`Uj`Y`Zc`W`ggYX`cb`]bWc`fdcf`U`h`b[`a`cfY`f`bcb!`hfUX]h]cb`U`fi`
a`U`h`f`U``]b`h`Y`Zc`fa`c`ZdcXWUghg`z`XcW`a`Yb`Uf]Yg`UbX`ch`Yf`bcb!UWUXYa`]WZc`fa`Uhg`"

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

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

≠mci`YbWci bHYf`U`dfcV`Ya`k`Yb`U`HYa`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]h]b`z`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`fI`*)`XUmg`U`mY`UfL`≠mci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`YbhXi`Y`hc`U`ZU`ihk`]h`Hi`fb]h]b`mci`a`Um`Udd`mi`Zc`f`Ub`YI`HYbg]cb`z`Vi`hmc`i`
a`i`ghfY`hU]b`mci`f`h]W`Yhbi`a`VYf`Zca`9I`HYfbU`Gi`ddcfhfU`cb[`k`]h`Ubmc`h`Yf`fY`Yj`UbhXcW`a`Yb`hgL`hc`
]bWi`XY`Ug`Yj`]XYbW`hc`gi`ddcfhmc`i`f`YI`HYbg]cb`Udd`]W]h]cb"≠mci`Ya`U]`9I`HYfbU`Gi`ddcfhmc`i`k`]"`

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

D`U[]Uf]ga `]g`i g]b[`hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[`hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm
Zcfa gZ`Zca `XY`]VYfUHY`WXYU]b[`hc`UWV]XYbhU`mW`dm]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.

7 cdm]b[.`i 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`U`gc`Udd`]Yg`hc`]a U[YgZ`UfhUbX`XYg][b`dfc`YWgZ`Ug`k Y`Ug`
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`Ub[]b[`U`ZYk `k cfXg`UbX`d`fUgYg`k \]Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`i fY`UbX`#`f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`Z`UbX`]bZcfa U]cb`k]h`ci hUW_bck`YX[Ya Ybh`H\]g`U`gc`
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]hU`bX`hc`
d]YW]b[`hc[YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk `k \c`Yz`k]h`ci hUddfcdf]UHY`fYZYfYbW]b["

7 c`i g]cb.`k cf_]b[`k]h`chYfg`Vi hdUgg]b[`cZ`hY`k cf_]Ug`U`dYfgcb`g`]bX]j]Xi U`k cf_]7 c`i g]cb`U`gc`
]bWi XYg`dfcj]X]b[`mci f`k cf_]hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHY`Zc`f`Zc`hY`di fdcgY`cZ`hY`a

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wc'dmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dY'W'X'cZYj Yfmcby']b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj]W'g'UbX']bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k]''VY'ZJa]]Uf'hc'mci ž'c'h'Yfg'k]''VY'bYk "; U]b]b['U'gc'X'i bXYfghUbx]b['cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k]''\Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\h'hd.##ji V'Y'W'i \]X'Yg" \]VfUfm'i bgk "YXi "Ui #' \]gY#UVci h' \]gY](#)

5 WUXYa]WbZcfa Uhcb`

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

- fYei Yghg`ZcfYI hYbg]cb/
- `UhY`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/
- gdYWU`Vc]bg]XYfUh]cb`]b`hY`Yj Ybhcz]`bYgg`cf`a]gUXj Ybh fY/
- ghi XYbhYei]m]UbX`X]gUV`]m/
- UbX`chYfYggYbh]U`UWUXYa]W]bZcfa Uh]cbz`gYY

[\hfdg.#k k k "Ufng"i bgk "YXi "Ui #W ffYbhghi XYbh\]bZcfa Uhcb`dfcVc`g!\[i \]XY`\]bYg#](#)

⇒ U[Y`7 fYX]h

DUi `U`F Y[czH\Y`7 ca dUbm]cZK ca Ybž%- - +

7F ⇒ CG