



ARTS3021

7 fYU[h]j Y`K f]h]b[`#hYfbg\]d

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



GWXcc`cZHAY`5ftg`UbX`A`YXJU`##`I`BGK`..5ftg`UbX`GcWJU`GWYbWg

7 ci fgY'Cj Yfj JYk

'GHUZZ'7 cbhUW'i8YHU]'g'

'7 cbj Ybcfg'

B Ua Y	9a U]'	5j U]'UV]'m	@cWU]cb	D\cbY
9a a U'>UbY	Ya a U"UbY4 i bgk "YXi "Ui	6mUddc]bha Ybh	%%) ž'@Yj Y''%ž F cVYfh K YVghYf	

GWXcc`7 cbhUW'i bZcfa Uh]cb

Fcca " %&ž'Yj Y"" F cVYfhK YVghYf'6i]X]b[

D\cbY. f\$&Ł-' ,) '(,) *

9a U]': [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [\hfdg.#gUa "Ufmg"i bgk "YXi "Ui](#)

H\Y'GWXcc`cZhY'5fmg'UbX'A YX]U'k ci 'X`_Y'hc'F YgdYWw'`m5W_bck 'YX[Y'hY'HfUX]h]cbU`7 i ghcX]Ubgž
hY'6YXY[U'fP Ybg]b[hcb'WJa di gŁž; UX][U'f7]mUbX'5fhi' '8Yg][b'7 Ua di gYgŁ'UbX'hY'B [i bbUk U`
dYcd'Y'fBi gfu]Ub'8YZ'bwW': cfW'5WUXYa m]b'7 UbVYffUŁ'cZhY''UbXg'k \YfY YUW'WJa di g'cZI BGK 'jg
'cWU]hYX"

7ci fgY'8YHJ`g

7fYX]hDc]bhr '*`

Gi a a UfmicZ\hY'7ci fgY

Gi V\YWh5fYU.'5d\sf[hWI dff`Y`

H\]g`Wci fgY'dfcj]XYg'mci `k]h`Ub'cddcfh b]mhc`i bXYfhU_Y`k cf_!]bhY[fUH\X`YUfb]b[`UbX`[U]b`]bXi gHfm
YI dYf]YbW\`k]h`U`cgchcf[Ub]gU]cb`WcgY`mfY`UH\X`hc`mci f`A U`cf`]b`7 fYU]j Y`K f]h]b[``Mci `a UmU`gc`Udd`m
hc`k cf_`cb`UH\UW\`a Ybhc]b`Ub`UW\XYa]WfYgYUfV\`dfc`YWhcf`k cf_]b`Ub`YX]hc]f]U`fc`Y`Zcf`Ub`UW\XYa]W
`ci fbU``\YU`mž`mci `k]`i bXYfhU_Y`Ub`]bhYfbg\]d`UZhf`mci `Uj Y`Wca d`YH\X`%) `mYUfg`cZ\ `!h]a Y`gh`Xmf`f
Yei]j U`Yb]h`UbX`Wca d`YH\X`U`a]b]a i a `cZ% `I C 7]b`hY`A U`cf``5h`hY`YbX`cZ\hY`]bhYfbg\]d`mci `k]`
dfcj]XY`U`gi a a U]j Y`fYdcfhcZmci f`YI dYf]YbW\g`UbX`k cf_`YI Ua d`Yg`Wca d`YH\X`Xi f]b[`hY`]bhYfbg\]d`

H\Y`]bhYfbg\]d`fYei]fYg`U`hc]U`Wca a]ha YbhcZ%\$!%) \$`\ci fg`cZk cf_`k]h`U`cgchcf[Ub]gU]cb`UbX`a Um
bcfa U`mVY`hU`Yb`]b`Z]ghž`gYWcbX`cf`gi a a Yf`gYa YghYf``b`hYfbg\]d`cddcfh b]h]Yg`UfY`UXj Yfh]gYX`j]U`hY
GV\cc`cZ\hY`5f]g`UbX`A YX]U`b`hYfbg\]d`B`Yk`g`YH\Yf`5`hYfbU]j Y`mimci `a UmUddfcUW\`U`fY`Yj Ubh
cf[Ub]gU]cb`hc`Udd`mZcf`Ub`]bhYfbg\]d``Df]cf`hc`gYY_]b[`Ub`]bhYfbg\]dž`mci `g\ci `X`UH\YbX`Ub`]bhYfbg\]d
]bZcf`a U]cb`gYgg]cb`fi b`Vm`hY`GV\cc`cZ\hY`5f]g`UbX`A YX]U`

Hc`VY`Y`][]VY`Zcf`h]g`Wci fgYžmci `a i gh\Uj Y`U`a]b]a i a `K 5A `cZ+`\$`

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

%` \Uj Y`[U]bYX`YI dYf]YbW`cZ]bXi gHfmdfcW`ggYg`UbX`dfUW]W\g
&` Udd`mh`YcfY]W\`WcbW\dfg`UbX`dfUW]W\`g_]`g`[U]bYX`]b`hY`dfc[fUa `hc`fYU`!k cf`X`WcbhYI hg
' `` \Uj Y`Yb\UbW\X`hY]f`WUdUW]mZcf`]bXYdYbXYbhYb[U[Ya Ybhk]h`]bXi gHfmdfcj]XYfg

HYUW\]b[`GhfUH\ []Yg`

H\]g`Wci fgY`\Ug`bc`Zcf`a U`hYUW\]b[`Wca dcbYbh`

5ggYgga Ybh

H\]g'gi VYWh]g'i b[fUXYX'gc'U'dUgg'jg'XYdYbXYbhcb'GUh]gZUWc'fmi'fGM'c'f'I' bgU]gZUWc'fmi'fI' @]b'a'YYh]b[hY'W'ci'fgY'fYei'j]fYa'Ybhg'"5b'GM[fUXY'k'j"bchUZYW'w'nci'f'k'Y][\hYX'Uj'YfU[Y'a'Uf_'fK'5A'k'Vi'hU': @[fUXY'k'j]"

7ci'fgY'fYei'j]fYa'Ybhg'j]bW'XY.

- 7ca'd'Yh]cb'cZU'a'j]b]a'ia'icZ%\$\$'\ci'fg'cZd'UW'a'Ybh
- Gi'Va'j]gg]cbg'cZUggYgga'YbhHUg_g'%'&'XYa'cbghfU]b['U'gYf]ci'g'U]hYa'dh'c'Ubgk'Yf'hY'fUg_'fYei'j]fYa'Ybhg'
- Gi'Va'j]gg]cb'cZVch'hY'\cghUbX'gh'XYbhZYXVUW_'Zcfa'g

5ggYgga YbhHUg_g'

5ggYgga YbhHUg_g'	K'Y][\h	8i'Y'8U]Y'	Gh'XYbh@YUfb]b[C'i'h'W'a'Yg'5ggYggYX
7f]h]WU'F'YZYW]cb')\$i	5bmi]a'Y'VY'Zc'fY')da'icb'h'Y : f]XUmcZK'YY_'%\$"	%z&
K'cf_'9j'j]XYbW')\$i	5bmi]a'Y'VY'Zc'fY')da'icb'h'Y : f]XUmcZK'YY_'%\$"	%z

5ggYgga Ybh8YhU]g'

5ggYgga Ybh%'7f]h]WU'F'YZYW]cb'

GHUfhXU]Y.'

8YhU]g'. Gh'XYbh'k'j"gi'Va'j]hU'W]h]W'fYZYW]cb'k'\j]XVf]YZm'XYgW]VYg'h'Y'hd'Y'cZc'f[Ub]nU]cb'h'Y'mk'YfY'd'UW'X'j]b'UbX'h'Y]f'fc'Y'k'j]h]bUW' bUW'

XYgW]dhcb'cZk cf_Zck 'j]b'fY`Uhcb'hc`U`Uf[Yf'dfcWggž'cf'g]a]'Ufž]Y`]hg\ci`X'dfcj]XY`Yj]XYbW'cZdfUW]WU`
k cf_`i bXYfU_Yb`Xi f]b[`h`Y`d`UW`a Ybh`H\]g`g\ci`X`VY`U`a]b]a i a `cZ&) \$`k cfXg`Vi`hia`Uma`U`Y`i`d`a`cfY`
cZ`h`Y`W`a`V]bYX`hc`U`cZ%) \$\$!&) \$\$`k cfXg`Zcf`Vch`UggYgga`YbhW`a`dcbYbhg"; fUX]b[`k]`VY`
GUhgZUW`c`fm#`bgUhgZUW`c`fmUbx`gca`Y`gi`a`a`Uhj`Y`ZYXVUW`_k]`VY`dfcj]XYX"

Gi Va]gg]cb`bchYg.HUg_g`%UbX`&UfY`hc`VY`gi`Va]hYX`]b`U`g]b[`Y`XcW`a`Ybh`c`A`ccXY"

F Ygci fWg

DfYgW]VYX`F Ygci fWg`

H\YfY`UfY`bc`dfYgW]VYX`fYgci fWg`Zcf`h]g`Wci fgY"

F YWca a YbXYX`F Ygci fWg

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

Øf]YZmci h]bY`ack`gh`XYbhZYXVUW`fVch`Zcfa U`UbX`]bZcfa U`E`cb`hY`Wci fgY`k`J`VY`[U`hYfYXZ`ack`]h`k`J`VY`UbU`mgYX`UbX`ack`]hk`J`VY`UW`X`i`dcb`hc`]a`dfcj`Y`hY`gh`XYbh`YUfb]b[`YI`dYf]YbW": cf`YI`Ua`d`Yž`mci`a`][`hX]gW`gg`k`U`hik`Ug`]XYbh]ZYX`]b`dUghZYXVUW`UbX`ack`h]g`Wci`fgY`k`Ug`W`Ub[`YX`hc`UXXfYgg`hY`]ggi`Y`Q

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`hik`]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 gž 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[YgžUfhUbX`XYg][b`dfc`YWgžUg`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`U`b[]b[`U`ZYk`k cfXg`UbX`d`fUgYg`k`Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`fY`UbX`#`f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`ž`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`Yž`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`XUHYž`cf`Zc`f`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'Wcdmf][\hž' 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`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]W'g'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 ""

[\hhd.##ji V'YW'i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

