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QQ

**CO RSES IIA GHU AD SKIDMORE COLLEGE**

"

^ 7%8\$13+9-3% \_ /\$%3`\$13+%\$(=" 'B\$\$3+\*K . =GGaL"  
^ 7%8\$13+9-3% B "W%1 '\*%\$13+%\$("N%\$3\*+% O '%1-+", "=7-3% ' --K . ="JMHL"  
W% \*+87T13+6"1+ b +O '%c- "61783' -"Kd b " !M!L"  
W- B " . '( / "+1" =+3(3% / " \_S '\*e"93S '\*-31D"\$%8"93-T\*3O 3%\$13+% "3%"IB ""  
5) '\*3T\$% " +\* : (\$T "K . ="JJHYL"  
2 'E"234 '\*D"\$%8"IB "" )7\*-731"+, ">\$ : 31\$(3- O "K66) " !MML"  
. 7(13T7(17\*\$ ("^( \$\* 'IR : -0"Nf : (+-3S "W8 '%131D">+%, (3T1- "3%"IB " "R65 "KW 9"GG !L"  
6 '%3+\*"6' O 3%\$\*3% "W%1 '\*%\$13+%\$( "5 , , \$3\* -"KW 5 "J JHL"  
^\$T' - "\$%8") B\$- ' - "+, "d (+4\$( ">\$ : 31\$(3- O "KW 5 "J@ !L"  
[ '- '\$\*TB" . 'IB+8- "3% "W%1 '\*%\$13+%\$( "5 , , \$3\* -"KW 5 "GM !L"

**CO RSES IIA GHU O IISIDE SKIDMORE COLLEGE**

"

Y 0 \$% [ ' +7\*T . \$%\$ / ' O '%1"KR%8 '\*/\*\$87\$1 "' < " . = 5L"  
! . 3%\$ / '\*3\$ 6&3( "KNf ' T713S 'L"  
! \_ /\$%3` \$13% %\$(=" B\$\$3+\*KR%8 '\*/\*\$87\$1 'E" . = 5 "<"9+T1+\*\$(L"  
! \_ /\$%3` \$13% %("<" 8 O 3%3-1\*\$13S "'UB' +\*D"KR%8 '\*/\*\$87\$1 "' < "9+T1+\*\$(L"  
! W% '\*%\$13+%\$("N%\$ \*+% O '%1-+", "=7-3% ' --"KR%8 '\*/\*\$87\$1 "' < " . = 5L"  
! g \$(31\$13S ^3'(8 . 'IB+8- "K9+T1+\*\$( "6' O 3%\$\*L"  
! A\$\* \$13S "'d '%\* - "+, " [ '- '\$\*TB"K9+T1+\*\$( "6' O 3%\$\*L"  
! >+\* : +\*\$1 "'6+T3\$( [ '- : +%-343(31D"K . \$-1 '\*- "<"9+T1+\*\$(L"

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**DOCUORALS PER ISION**

"

X7831B"=3\*8- '((" 5% "W%-131713+%\$( "5% \$(D-3- "+, ") + (3TDI . \$&3% / "3%"IB "" > \$%\$83\$%"  
= \* '\$-1 ">\$%T '\* " [ '- '\$\*TB" W%313\$13S "'KR%3S '\*-31D"+, ">\$( / \$\*DE"  
! \ \ ?L"

"

U30+1BD"YD% '- )\$11 '\*% - "+, " . +T&" = 7\* '\$7T\*\$TD"3% " . 3%3% / "93-\$-1 '\*- "  
KR%3S '\*-31D"+, ">\$( / \$\*DE" ! \ \ \ L"

"

>B\$\*(+11 "NTB1% '\* " 5") +-1T+(+3\$( "6' O 3+13T"6178D"+, "IB "" . \$&' 13% / "+, "UB3\*8"  
b +\*(8" U+7\*3- O "9 ' -13%\$13+% - "KR%3S '\*-31D"+, ">\$( / \$\*DE" GMMML"

"

X' , , \*'D"NS '\* '11" )74(3T") + (3TDI . \$&3% / "3%") \$\* & - ">\$%\$8\$0"R-3% / ") 3 '\* \* ' "  
= +7\*83' 7"1+ "R%8 '\*-1\$%8 "W%-131713+%\$( "9D% \$ O 3T- "KR%3S '\*-31D"  
+, ">\$( / \$\*DE" GMM !L"





"

Nf\$03%3%/"1B'">+%1+7\*-"+" b +\*&:(\$T'"93S '\*-31D0">+%T':1-E">+%1' f1-"\$%8">B\$((%' / '-  
KC31B"5(3-+% i +%\*\$8"<"X7831B")\*3%/( 'L;"W%"5;" i +%\*\$8E");)\*\$-\$8"<"X;")\*3%/( '"KN8-;LE"  
B#':C556)5\$)45"6<,#1.)D&-."O&%E0"!IGG;"2+%8+%0"6\$/ '"")74(3T\$13+%-;"GMMH;"

"

93S '\*-31D"+%"\_7\*" . 3%8-0" . \$%\$/3%/"93,, '\* '%T'"3%">+%1' O :+\*\$\*D" \_\*/\$%3`\$13+%-;"W%""  
6;"A+7\*" <"2;"A'((O\$%"UB3-1'8"KN8-;LE"

"

REFEREED JO RNAL P BLICATIONS

"

60+&'%"\$8" . 3\*\*+\*-0"W%-131713+%\$( "N%1\* \*%'7\*-B3:"\$%8" d '%8' \*W8' %1313' -"3%"1B'"R;6;"  
U+4\$TT+"W%87-1\*DE"! \GMI! \a@"KC31B"5%-B70\$%) \*\$-\$8"<" i '(D="\$&'\*L;"F"('#'&G##&5'E"  
GM!HE"GJ0"GG]IGa\;"

"

W%+%S\$13+%3%"1B'" d(+4\$("5 / '0"W0 : (3T\$ +%- ,+\*" =7-3%' --"\$%8" . \$%\$ / ' 0 '%1"3%"1B'"  
i %+C('8 / ' "NT+%+ 0D"KC31B"5%-B70\$%) \*\$-\$8L;"J'%. " '#&5 '#, )05+" '#, )5\$)P+0&' .00)  
H: ; &'&0%'#&5'E"a0"?GI?\;"GM!J;"

j\_%"' . 3\*\*+\*"3%"5%+1B'\*k0" . \$%\$/3%/"93S' \*-31D"\$%8"1B'"93-T+7\*- '+' , ^\$-B3+% "KC31B"  
5%-B70\$%) \*\$-\$8"<" [ '\$ '\$ . 3\*L;"B+ ; #' ) / . , #&5 'OE"GM!GE"Ha0" ]MJ"n" ]Ga;"

"

. +S3% / "\_710"U+C\$\*8"R%8' \*-1\$%83% / "1B'">+ 0 : (' f31D"+, "\_71-+7\*T3% / "3%"1B'"5 / '+' , "  
d(+4\$(3`\$13+% "KC31B"5%-B70\$%) \*\$-\$8L;"P+0&' .00) / . '#&00#'1.) \*+##% . ",EE"GMM]E"G0"H] "I" \ !;"

"

d(+4\$( "U\*\$%-313+% -0"UB'"NO '\* / 3% / "A'C" b +\*(8" \_\*8' \*%"\$8"31-"W0 : (3T\$13+% - ,+\*" =7-3%' --"  
\$%8" . \$%\$ / ' 0 '%1"KC31B"5%-B70\$%) \*\$-\$8L;"P+0&' .00) / . '#&00#'1.) \*+##% . ",EE"GMMHE"!p"  
\ !I!!J;"

"

W%"1B'"A\$0 '+' , "1B'" ) \*\$T13T\$(0"R%' \$\*1B3% / "1B'"Y' / ' 0+%D"+, ) \*\$ / 0\$ETQq21\$ . 2+8l(/' ) 0 . 2(] 0 . 0 . 412589

"

UB 'N('T1\*+%3T"U\*\$%-,+\*O\$13+%"+,"IB" \_\*/\$%3`\$13+%\$( " . ' '13%/0"R-3%/"U'TB%+(+/DI3%I  
>+%1' f"1+"R%8 '\*-1\$%8" d\*+7:"67: :+\*1"6D-1' 0-"Kd 66-L;"KC31B"9\$%>(\$: : '\*L;"9. 12 '5,5(E)  
>%+:.d.O"E"!\ \ \E"S+(;aE"

"

NS '\*D8\$D"61\*7//('-\$1"IB'" b +\*&:( \$T'0"UB "'A\$17\*" "\$%8"W O :(3T\$13+%-"+," [ +713%" [ '-3-1\$%T'"  
KC31B" 5%-B70\$%) \*\$-\$8L;"/.0.#"12)&' )%2.)>5I&5,5(E)5\$)F"(# '&G#%&5 '0E"!\ \ \E"S+(; !@E"GG@I  
G@];"

"

b B '% "IB" "N1B%+/\*\$: B3T"674h'T1"6: '\$&-"=\$T& ;05+" '#,)5\$)=#'#(. ; . '%)J'L+d"EE"!\ \ \?E"  
S+(;]E"J!IJH;"

"

)\$11' \*% -"+, " . +T&"=7\* '\$7T\*\$TD"3%" . 3%3%/"93-\$-1' \*-0" 5%" 5%\$(D-3- "+,"IB" b '-1\*\$D" . 3% '"  
Nf:(+ -3+% "KC31B"U3O +IBD"YD% '-LE"05+" '#,)5\$)=#'#(. ; . '%)>%+:.d.OE"!\ \ \]E"S+(;JaE"HM!I  
HGJ;"

"

>\*31T\$("UB'+\*D"\$%8" . \$%\$/ ' O ' %1"N87T\$13+%0"N%/\$/3%/") +C' \*E"W8'+(+/D"\$%8") \*\$f3-"KC31B"  
)\$7(\$">\$: +%3L;05+" '#,)5\$)=#'#(. ; . '%)K: +I#%&5 'E"!\ \ \]E"S+(;G!E"

"

b +\*&3%/"C31B"IB" "q60\$\*1c" . \$TB3% '0">+O :71' \*3` \$13+% "\$%8"IB" "93-T+7\*- ' "+,  
5 %1B\*+: +O+\* :B3- O "3%" \_\*/\$%3`\$13+%-;">%+:.d.0)&' )!+,%+" .0N)F"(# '&G#%&5 '0)#':.)>5I&. %&. OE"  
!\ \ \@E"S+(; !E"G@JIGH@;"

"

UB "'W8'+(+/D"+,") \*+, '--3+%\$(3- O "\$%8" b +\*& ">+O :71' \*3` \$13+%0" 5%"W%-131713+%\$(3-1"6178D"+,  
U'TB%+(+/3T\$(">B\$%/" "KC31B" 5%-B70\$%) \*\$-\$8L;"B+; #' )/.,#%&5 '0E"!\ \ \aE"S+(;a]E"!aJJI  
!a@?;"

"

9\*7/"U' -13%/"\$-"6D04+(3T" . \$%\$/ '\*3\$("5 T13+% "KC31B" . 3&'">\$\$%\$7/BL;"F"(# '&G#%&5 '0)  
>I&. 'I.N"!\ \ \aE"S+(;@E"GH]IG]!;"

"

6D04+(3T") \*+T' -- "-3%"IB" "W O :(' O ' %1\$13+%"+,"U'TB%+(+/3T\$(">B\$%/'0" 5"6D04+(3T"  
W%1'\*\$T13+%3-1"6178D"+," b +\*& ">+O :71' \*3` \$13+%;HI#: . ; E)5\$)=#'#(. ; . '%)05+" '#,E"!\ \ \aE"  
S+(;JHE"!aMMI

PUBLISHED PANEL DISCUSSIONS

9+T1+\*\$("N87T\$13+% "\$8"IB" "U" \$TB3%/" . 3--3+%; "5"93\$(+/7'"C31B"X'\$%"=\$\*17%'&E"2' "'
=7\*&'E"X\$%" "d3\$T+44'I . 3((' \*E">\*3/"27%84'\*/"\$8")7-B&\$("\$)\*\$-\$8;)/05+" '#,)/5\$)
=#'#( . ; . '%)K:+I#%&5'-(!\ \HE"S+(:GM;"

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SPECIAL EDITORIAL ASSIGNMENTS

>+I'831+\*"KC31B" \$7(\$>\$: \*+%3LE"- : 'T3\$("3--7'"+">\*313T\$("UB'+\*D"\$8" . \$%\$/ ' O '%1"
N87T\$13+%E""05+ #,)/5\$)=#'#( . ; . '%)K:+I#%&5'E'!\ \]E"S+(:G!;"
">+I'831+\*"KC31B" \$,%\$ND(+%LE"- : 'T3\$("3--7'"+"1B"Y3-1+\*D"+, " b +\*&:( \$T"NO : +C '\* O '%1E""
05+" '#,)/5\$)H<<, (:)P. 2#-%5'#,)>I&. 'I.E"GM!E"S+(:J]E"A+;"!;)
">+I'831+\*"KC31B"5%-B70\$%)\*\$-\$8LE"- : 'T3\$("3--7'"+"W%1'\*: \*'13S'"d '%\*'- "3%" \_\*/\$%3`\$13+%
['-'\*\$TBE" F"(# '&G#%&5')/.0.#"12)=.%25:0E"GMMGE"S+(:@E"A+;"!;"

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CONFERENCE PROCEEDINGS

)\*\$T13T\$(D"9\$%/'\*+7-0"Nf:(+\*3%/"1B"Y'/' O +%D"+, "q)\*\$/ O \$13-0c"3%1B"93-T+7\*- "'+, "
N%\$3\*+% O '%1\$("\$ . \$%\$/ ' O '%1"KC31B" . 3TB\$\$("N(O'-L;"7"51. . :&' (0)5\$)%2. )M#'( +#(. )&' )
P+0&' .00)#':)F"(# '&G#%&5'0">+%, '\*%T'E" \_B3+61\$1"R%3S '\*-31DE">+(7 O47-E" \_B3+E" . \$D"
!\\\;"
"KR%LC3((3%/"1+" [ '-3-le">7%%3%/"5 T1+\*-E"W8'+(+/3T\$("97: '-"\$8"IB"93-T7\*-3S'"
>+%-131713+%"+, " [+713%"" b +\*&:( \$T" [ '-3-1\$%T"KC31B"5%-B70\$%)\*\$-\$8L;"7"51. . :&' (0)5\$)
%2. )RS^2)J'%' . "'#%&5'#, )M#C5+"7"51.00)!5'\$ . "'I.E"2+%8+%E" . \$\*TB"!\\\;"
"b B\$1"3%"1B" b +\*(8"9+'- "W%1'\*\$13+%\$(" . '\$%e"5")\*(3 O3%\$\*D"W%S'-13/\$13+%"+, " . =5"
)\*+/\*\$0"=\*+TB7\*'- "3%"A+\*1B"5 O '\*3T\$%"=7-3%' --"6TB+(-"KC31B">B\*D--"\$6B\$\*:L;"
7"51. . :&' (0)5\$)%2. )H' '+#, )= . . %&' (0)5\$)%2. )K#0% . "' )H1#: . ; E)5\$)=#'#( . ; . '%E" . \$D"! \ \HE"
b \$-B3%/1+% "9;>;"
" . +T&"=7\*\$7T\*\$TD"\$-\$" i 'D" ^\$T1+\*3%"W%87-1\*3\$(">\*3- '-0"5%"5%\$(D-3- "+, "1B" b '-1\*\$D">+\$( "
. 3%""93-\$-1' \*"KC31B"U3O+1BD"YD% '-L;"7"51. . :&' (0)5\$)%2. )K#0% . "' )H1#: . ; E)5\$)
=#'#( . ; . '%E" . \$D"! \ \ @E"WB\$T\$E"A' C' F+\*&;"
"UB" [ \$13+%\$(3`\$13+%"+, "1B" \_\*/\$%3`\$13+%\$(" . "'13%/0"W O : (3T\$13+% "- "+, "d\*+7:"67: :+\*1"
6D-1' O - "+\*)+C' \*E"6D O4+(3- O "\$%8" ^\$T' I b +\*&"KC31B"9\$%3\$(">(\$: : '\*L;"7"51. . :&' (0)5\$)
%2. )H' '+#, )= . . %&' (0)5\$)J! J>"KW%1'\*\$13+%\$(">+%, '\*%T'"+%W%, +\* O \$13+% "6D-1' O -LE"
9' T' O4' \*!" \ \ JE"^(+\*38\$;"



"

9\*7/"U'-13%/"3%"IB'" b +\*&:(ST'0"UB'"6D04+(3T' . \$%\$/' 0 '%1"+,"\$% \_\*/\$%3`\$13+%\$(">\*3-3-"  
KC31B" . 3TB\$'(">\$S\$%\$7/B"\$%8"X+B%" . 3TB\$'("\_&' -L;"7"51...:&'(0)5\$)%2.)K#0%."')  
HI#:. ; E)5\$)=#'#(. ; . '%E" . \$D"! \ \ GE"=\$130+\*';"

"

23, "\$%8"9 '\$1B"3%">\$\* ' '\*0"5"Nf: '\*3'%13\$("Nf'\*T3-'"23%&3%/">\$\* ' '\*")(\$%3%/"1+"6178 '%1"  
Z\$(7' -"\$%8"A+13+%-"+,"1B"qd++8"23, 'c;"7"51...:&'(0)5\$)%2.)K#0%."')HI#:. ; E)5\$)  
=#'#(. ; . '%E" . \$D"! \ \ GE"=\$130+\*';"

"

UB'">+%T':1"+, "5(3'%\$13+% "\$%8" b +\*&:(ST'"N0 :+C '\*0 '%1"KC31B"5%-B70%) \*\$-\$8L;"  
7"51...:&'(0)5\$)%2.)K#0%."')HI#:. ; E)5\$)=#'#(. ; . '%E" . \$D"! \ \ !E"Y\$\*1,+\*8;"

"

qW0\$/%3/"c"1B'" \_\*/\$%3`\$13+% "3%"1B">(\$-+\*++00")+\*1\$317\*'"\$-\$") '8\$+/+3T"9 'S3T'"+\*"  
Nf: '\*3'%T3%/"93S '\*-' \_\*/\$%3`\$13+%\$ (" [' '\$(313'-'KC31B"X;" . 3TB\$'(">\$S\$%\$7/BL;"7"51...:&'(0)  
5\$)%2.)K#0%."')HI#:. ; E)5\$)=#'#(. ; . '%E" . \$D"! \ \ ME"=7,,\$(+;"

"

UB'">+0 :71 '\*3`\$13+%"+, "b B31'I>+(((\$" b +\*&"3%" \_\*/\$%3`\$13+% -0"5">\*313T\$("\$%8"  
>+0 :\* 'B' % -3S'"67\*S'D"+,"1B"231 '\*17\*"C31B"67// '-13+%-"+\*^717\*" [' - '\$\*TB;"  
7"51...:&'(0)5\$)%2.)D. 1&0&5')>1&. '1.0)H' '+#), =. %&'(0E"A+S' 04 '\*! \ ? \ E"A'C" \_\*('\$%-;"

"

\_\*/\$%3`\$13+%I . \$&3%/"\$%8" . \$3%1'%\$T'0"5%"W%1 '\*: '\*13S'"5TT+7%1"+,"\$R%3+%c-'^+\*0\$13+%  
3%"F\$("\$R%3S '\*-31D;"7"51...:&'(0)5\$)%2.)K#0%."')HI#:. ; E)5\$)=#'#(. ; . '%E" . \$D"! \ ? \ ;"

"

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**REFEREED CONFERENCE PRESENTATIONS**

"

>\$\*\*3'8"\$%8"9 '(3S '\*'80" [ \$T3\$(3`'8" d '-1\$13- )\$2\$4+\*\$%8"A'C">+%1+7\*-"+" ) \*T\$\*31D;"  
)\$: '\*:\*'-'%1'8"\$1"1B'"5%%7\$( . ' '13%/"-+" B "NS-1'\*%"6+T3+(+/3T\$("6+T3'1D" . ' '13%/"-E"  
)B3(\$8'(:B3E"'^'4\*7\$\*D"GMGM;"

"

UB'"U+\*" g 73(10"R%8 '\*-1\$%83%/">+%1'0 :+ \$D' 18 '%131D">+%, (3T1-"UB\*+7/B"1B'"Z'B3T('"+,"  
Nf:(+-3S'" \_\*/\$%3`\$13+%\$ ("N%T+7%1' \*-\*;")\$: '\*: '\*-'%1'8"\$1"1B'"=3\$%7\$( " g [ . "Kg 7\$(31\$13S'"  
[ '- '\$\*TB" . '1B+8-"3%" \_\*/\$%3`\$13+% -L">+%, '\* '%1'E"5(47m7 '\*m7'E"A'C" . ' f3T+E" . \$\*TB"  
GM! ?;"

"

5%30\$("Nf13%T13+%- "\$%8"NT(3: -'"+,"1B'"6\$T\*'80"UB'" b +\*(8+", "1B"'^7\*"U\*\$8'"3%"A'C"  
N%/"\$%8"\$%8"1B'"d\* '\$1"2&&' -" [ '/3+% "3%"1B'"!H1B"\$%8"! ]<sup>1B</sup>



"

W%-131713+%- "\$%8"Nf+13T3`\$13+%0" . \$%\$/3%/ "1+ " i ' ' : "1B " " \_1B ' \* "3%")(\$T ' ; ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1" IB ' " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " 9 ' %S ' \*E " 57/7-1"GMMG;"

"

9 ' -3/ %3% / " 93 , , ' \* %T ' 0 " 93S ' \* -31D " . \$%\$/ ' 0 ' %1 "\$%8"1B " " 93-T+7\* - ' "+ , ^\$-B3+% "KC31B" 5%-B70\$%) \*\$-\$8L;" ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " ! ?1B " 5 % % 7 \$( " . ' ' 13% / - "+ , "Nd \_6"KN7\*+ : ' \$%" d \* +7 : " , + \* \_ / \$%3` \$13+% " 61783 ' -LE" = \$\*T ' ( + % \$E " X7 ( D " GMMG ; ""

"

= '1C ' ' % "A\$13S ' "\$%8") \* + , ' --3+% \$( " 61\* \$% / ' \* 0 " N1B % + / \* \$ : B3T " 93 ( ' 0 0 \$ - "3% "1B " " 6178D "+ , " \_ / \$%3` \$13+% \$( " > 7 ( 17 \* ' - ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " b \$ -B3% / 1+%E " 9 ; > ; E " 57/7-1E"GMM ! ; ""

"

> \* + - -3% / " > 7 ( 17 \* ' - 0 " 5 " ) + - 1T + ( + % 3 \$( " 5 % \$( D - 3 - "+ , "\$% "W%1 ' \* I \_ / \$%3` \$13+% \$( " N%T + 7%1 " \* "KC31B" 5 / % ' 1\$ " . + 7 ( ' 11 ' - L ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " > \* 313T \$( " . \$%\$/ ' 0 ' %1 " 61783 ' - " > + % , ' \* %T ' E " . \$%TB ' - 1 ' \*E " R ; i ; E " X7 ( D " GMM ! ; ""

"

> ( + - " N%T + 7%1 ' \* - " C31B " 5T\$8 ' 03T " 93-T \* ' 831\$13+% "KC31B " . \$1 - " 5 ( S ' -- + % L ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " > \* 313T \$( " . \$%\$/ ' 0 ' %1 " 61783 ' - " > + % , ' \* %T ' E " . \$%TB ' - 1 ' \*E " R ; i ; E " X7 ( D " GMM ! ; ""

"

. \$%\$/3%/ " 2 ' / 313 0 \$TD " 3% " qW ( ( ' / 313 0 \$1 ' c " \_ / \$%3` \$13+% - ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " W%S31 ' 8" > + % , ' \* %T ' " + % "W%-131713+%-E" > + % , ( 3T1 "\$%8" > B\$% / ' E " A + \* 1BC ' - 1 ' \* % " R % 3S ' \* - 31DE " NS \$ % - 1 + % E " W 2E " 9 ' T ' 04 ' \* " GMMM ; ""

"

) \* + 0 3 - 3% / " [ \$%3+4-C-0 " 5 % "W%-131713+%( " 5 % \$( D - 3 - "+ , " 93S ' \* -31D " . \$%\$/ ' 0 ' %1 " 3% " A + \* 1B " 5 0 ' \* 3T\$ ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " U + \* + % 1 + E " 57/7-1"GMMM ; ""

"

6\$S3% / "1B " " N\$ \* 1B " W%T ; 0 " UB " " 2\$% / 7\$ / ' "\$%8" 2 + / 3T + , " . \$ \* & ' 1 " 93-T+7\* - ' - "3% " N%S3\* + % 0 ' %1 \$( " \_ / \$%3` \$13+% - "KC31B " X ' , " NS ' \* ' 1L ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " U + \* + % 1 + E " 57/7-1"GMMM ; ""

"

> \$ - 13% / "1B " " A\$13S ' " 674h ' T10 " N1B % + / \* \$ : B3T " ) \* \$T13T " "\$%8"1B " " K [ ' L ) \* + 87T13+ % " , " 93 , , ' \* %T ' " KC31B " 5%-B70\$%) \*\$-\$8L;" ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " > + % , ' \* %T ' " + , "Nd \_6"KN7\*+ : ' \$%" d \* +7 : " + % \_ / \$%3` \$13+% " 61783 ' -LE " Y ' ( - 3% & 3E " X7 ( D " GMMM ; ""

"

A\$13S " ) (\$T ' - "3% " \_ / \$%3` \$13+% \$( " 6 : \$T ' - 0 " N1B % + / \* \$ : B3T " i % + C ( ' 8 / ' "\$%8"1B " " [ ' : \* + 87T13+ % " + , " 93 , , ' \* %T ' ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " > \* + - - + \$ 8 - "3% " > 7 ( 17 \* \$( " 61783 ' - "W%1 ' \* % \$13+% \$( " > + % , ' \* %T ' E " = 3 \* 0 3% / B \$ O " E " R % 31 ' 8 " i 3% / 8 + O E " X7 % " " GMMM ; ""

"

N1B % + / \* \$ : B3T " g 7 ' - 13+ % - "\$%8"1B " " g 7 ' - 13+ % " + , " N1B % + / \* \$ : BD0 " X + 7 \* % ' D3% / " , \* + 0 " . ' 1B + 8 " 1 + " U \* \$ 8313 + % "3% " ) ( 7 \* \$( 3 - 13T " b + \* ( 8 " KC31B " 5 % - B70 \$ % ) \* \$ - \$ 8 L ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " > B3T\$ / + E " ! \ \ \ ; ""

"

UB " " [ ' , ( ' T13+ % " + , "W%-131713+%( " . D1B - "3% "1B " " 61 \* 7T17 \* 3% / " + , "\$" A\$13+ % \$( " . ' 83T \$( " [ ' - ' \$ \* TB " W%313\$13S " "KC31B " X7831B " = 3 \* 8 - ' ( ( " < " b 3 ( , \* ' 8 # ' \* 4 ' L ; " ) \$ : ' \* : \* ' - ' %1 ' 8 "\$1"1B " " 5 % % 7 \$( " . ' ' 13% / - "+ , "1B " " 5T\$8 ' 0D "+ , . \$%\$/ ' 0 ' %1E " > B3T\$ / + E " ! \ \ \ ; ""

"





"

>B\$3\*\$%8`\_\*/\$%3`' \*E")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"q>+\*:\*\$1''6+T3\$(" [ '-: +%-343(31D"C31B"\$>\*313T\$("N8/';c"6: +%--+\* '8"4D">\*313T\$(" . \$%\$/' 0 '%1"61783' -"\$%8" 6+T3\$("3--7'-'3%" . \$%\$/' 0 '%1"93S3-3+% -E"5T\$8' OD"+, . \$%\$/' 0 '%1"5%%7\$(" . ' '13%/-E" . +%1\*\$("E"57/7-1"GMM!M;"

"

)\$%'(3-IE"jW0 O3/\*\$13+% "3%"IB''R;6;0"W0 : (3T\$13+%- ,+\*" \_7\*"^717\*'k;"NO :3\*' "61\$1'">+(( / 'E" 6\$\*\$1+/\$6: \*3%/-E"A'CF+\*&;"9 'T' 04' \*GM!M;"

"

)\$%'(3-IE")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"W%1' \*\*+/\$13%/">\*313T\$(" . \$%\$/' 0 '%1" 61783' -; "6: +%--+\* '8"4D"IB" \_\*/\$%3`\$13+%\$( "9 'S' (+: 0 '%1"<">\*313T\$(" . \$%\$/' 0 '%1"61783' -" 93S3-3+% -E"5T\$8' OD"+, . \$%\$/' 0 '%1"5%%7\$(" . ' '13%/-E">B3T\$/+E"57/7-1"GMM\;"

"

\_\*/\$%3`' \*"\$%8")\*'- '%1' \*E")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"q2++&3%/" ,+\*" KR%L>+0 0+% "d\*+7%80"" g7\$%131\$13S' "\$%8" g7\$(31\$13S' "5 : : \*+TB' '-1+"6178D3%/" b +\*&:( \$T' " 93S' \*'-31D;c"" b +\*&-B+: '-: +%--+\* '8"4D"IB" ">\*313T\$(" . \$%\$/' 0 '%1"61783' -"\$%8"d '%8' \*' <" 93S' \*'-31D"3%" \_\*/\$%3`\$13+%- "93S3-3+% -"+, "IB'"5T\$8' OD"+, . \$%\$/' 0 '%1E")B3(\$8' (: B3\$E" 57/7-1"GMM];"

"

)\$%'(3-IE")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:0">\*313T\$("N%T+7%1' \*-0"2\$4+\*) \*+T' --E" 61\*7T17\*\$13+% "\$%8") + -1T+(+3\$3(3-0 "3%"93\$(+/7'; "5T\$8' OD"+, . \$%\$/' 0 '%1"5%%7\$(" . ' '13%/-E"Y+%(7(7E"Y\$C\$33E"57/7-1"GMM@;"

"

W%S31'8")\*'- '%1' \*E" d9 \_"Kd '%8' \*' <"93S' \*-31D"3%" \_\*/\$%3`\$13+%-L"9+T1+\*\$(">+%-+\*1370;" 5%%7\$(" . ' '13%/-+,"IB'"5T\$8' OD"+, . \$%\$/' 0 '%1E"Y+%(7(7E"Y\$C\$33E"57/7-1"GMM@;"

"

W%S31'8")\*'- '%1' \*E"> . 6"K>\*313T\$(" . \$%\$/' 0 '%1"61783' -L"9+T1+\*\$(" b +\*&-B+:0"93-T7--"D+7\*" 9+T1+\*\$(" b +\*&\*\$%8">\* ' \*'C31B' 2 '\$83%/"> . 6"6TB+(\$\*-;"5T\$8' OD"+, . \$%\$/' 0 '%1" 5%%7\$(" . ' '13%/-E"Y+%(7(7E"Y\$C\$33E"57/7-1"GMM@;""

"

>+I\_\*/\$%3`' \*"\$%8">+I^\$T3(31\$1+\*"+, "9+T1+\*\$(" b +\*&-B+: "+%" \_\*/\$%3`\$13+% "UB' +\*D;" 6: +%--+\* '8"4D" i 5U5X5", +\* "9+T1+\*\$("6178' %1-"3%" . \$%\$/' 0 '%1E"2\$: : ' '%\*\$%1\$" R%3S' \*'-31D+,"U'TB%+(+/DE"2\$: : ' '%\*\$%1\$E'X7%' "HIX7%' " !ME"GMM@;"

"

\_\*/\$%3`' \*"\$%8")\*'- '%1' \*E")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"q [ \$3-3%/"Z+3T' -0" 67-1\$3%3%/">\*313m7'"3%" \_\*/\$%3`\$13+%" [ '- '\$\*TBc;" b +\*&-B+: '-: +%--+\* '8"4D"IB" [ '- '\$\*TB" . 'IB+8-"\$%8">\*313T\$(" . \$%\$/' 0 '%1"61783' -"93S3-3+% -"+, "IB'"5T\$8' OD"+, . \$%\$/' 0 '%1E" 6'\$11('E"57/7-1"GMMJ;"

"

^\$T3(31\$1+\*\$%8")\*'- '%1' \*E")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"q>\*\$,13%/" g7\$(31\$13S' " ^3'(8C+\*&c;" b +\*&-B+: '-: +%--+\* '8"4D"IB" ">\*313T\$(" . \$%\$/' 0 '%1"61783' -E" \_\*/\$%3`\$13+%" UB' +\*D'"\$%8" [ '- '\$\*TB" . 'IB+8-"93S3-3+% -"\$1"IB'"5%%7\$(" . ' '13%/-+,"IB'"5T\$8' OD"+, . \$%\$/' 0 '%1E"6'\$11('E"57/7-1"GMMJ;""

"

>+I>B\$3\*" <"^\$T3(31\$1+\*E")\*+, '--3+%\$( "9 'S' (+: 0 '%1" b +\*&-B+:E"q^+((+C3%/"IB'">\*313T\$(" U7\*%0" . \$1'\*\$3(3-0E"9 'T+%-1\*7T13+%" <"W%-131713+%\$( "NIB%+/\*\$: BDc;" [ '- '\$\*TB" . 'IB+8-"

"

93S3-3+%E"5%%7\$(" . ' '13% / - "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E" b \$-B3% / 1+%E"9;>;E"57/7-1" GMM!;"

"

>B\$3\*" <" \_ \* / %3` ' \*E") \*+, ' --3+%\$ ("9 'S' (+: O ' %1" b +\* &-B+:E"q . ' '13% / "1B">B\$(( ' % / ' - "+, "1B" "A 'C"U3O ' -0">\*313T\$ ("5 : : \*+ \$TB' - "+, \*U' \$TB3% / "61\*\$1' / D"\$8" . \$%\$ / ' O ' %1;c" . \$%\$ / ' O ' %1" N87T\$13+% "93S3-3+%E"5%%7\$(" . ' '13% / - "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"U+\*+%1+E"57/7-1E" GMMM;"

"

>+ITB\$3\*\$%8^\$T3(31\$1+\*E") \*+, ' --3+%\$ ("9 'S' (+: O ' %1" b +\* &-B+:E"jW%1 '\*: \*' 13S' " \_ \* / %3` \$13+%\$ (" [ ' - '\$\*TB"3%"1B" "A\$\*\*\$13S" "d ' %\* ' -kE" [ ' - '\$\*TB" . ' 1B+8- "93S3-3+%E"5%%7\$(" . ' '13% / - "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"U+\*+%1+E"57/7-1"GMMM;"

"

b +\* &-B+: " \_ \* / %3` ` \*E"jW%1 '\*: \*' 13% / "1B" "W%1 '\*: \*' 13S' "0"93, , '\*%1" d ' %\* ' - "+, "g 7\$(31\$13S' " [ ' - '\$\*TB;") \*'I>+%, '\*%T" b +\* &-B+:E" [ ' - '\$\*TB" . ' 1B+8- "93S3-3+%E"5%%7\$(" . ' '13% / - "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"6\$%"93' / +E"! \ \ ?;"

"

^\$T3(31\$1+\*E)j=73(83% / ">+(( 'T13S' " [ ' - '\$\*TB"61\* '\$O-k;") \*'I>+%, '\*%T" b +\* &-B+:E" b +O ' %" 3%" . \$%\$ / ' O ' %1"93S3-3+%E"5%%7\$(" . ' '13% / - "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E">3%T3%%\$113E" ! \ \ H;"

"

) \*' - ' %1 ' \*E"jW-"Z\$(7' I^\* ' "U' \$TB3% / "1B" " b \$-1' (\$%8"+, "5T\$8' O3T"N%1 '\*: \*3- 'ek"9+T1+\*\$ (" >+%-+\*137OE" b ' -1' %\*"5T\$8' OD"+, " . \$%\$ / ' O ' %1" . ' '13% / -E"=\$%, ,E">\$%\$8E"! \ \ H;"

"

)\$%'(3-1E"jR%3,D3% / " \_ \* / %3` \$13+% "UB' +\*D0")\$\*\$83/ O"E)\$\*\$83/ O- "+\*"), ', , '\*83/ Oek"9'4\$1' " - : +%-+\* '8"4D"1B' " =7-3% ' --")+(3TDE" \_ \* / %3` \$13+% "UB' +\*D"\$8" . \$%\$ / ' \*3\$(">+ / %313+% "93S3-3+%E"5%%7\$(" . ' '13% / "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"Z\$%T+7S' \*E"! \ \ @;"

"

)\$%'(3-1E"jUB' " . 7(13T7(17\*\$(">(\$--\*++O k;") \*'I>+%, '\*%T" b +\* &-B+:E" \_ \* / %3` \$13+%\$ (" = 'B\$S3+\*"93S3-3+%E"5%%7\$(" . ' '13% / "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"9\$((-E"! \ \ a;"

"

6D0 : +-370">B\$3\*E"j \_ \* / %3` \$13+%\$ ("U' TB+(+ / 3' - "\$%8"1B" "U' f17\* ' "+, " b +\* &0">B\$% / 3% / ">+%, 3/7\*\$13+%- "+, ") +C' \*E" i % +C( '8 / " "\$%8" . ' %3% / "3%) + -I1W\$87-1\*3\$ ("W%-131713+%- ;k" 5%%7\$(" . ' '13% / "+, "1B" "5T\$8' OD"+, " . \$%\$ / ' O ' %1E"9\$((-E"! \ \ a;"

"

)\$%'(3-1E"jUB' "A' f1" d ' % ' \*\$13+%0" b B+" b 3(("U' \$TB"UB' Oek"5%%7\$(" . ' '13% / "+, "1B" "NS-1' %\*" 5T\$8' OD"+, " . \$%\$ / ' O ' %1E"5(4\$%DE"A' C" F+\* &E"! \ \ a;"

"

**RESEARCH IN PROGRESS**

\_ \* / %3` \$13+%\$ (" \_884\$((- "\$%8" \_71(\$C-0" . \$%\$ / 3% / "W(( ' / 313O \$TD"7%8' \*j 23\$43(313' - "+, "9 'S3\$T' k"KC31B"5%-B7O\$%) \*\$-\$8"\$%8" . \$7\* ' %"6T7((DL;"

"

! # < & #, & 0 ; W0) D# "6) ! 5 ; < , . X& 5 '3) / #1.N) = # "6. %0) # ' : ) J : . ' % & % E) K = + + & " O \$ % 7 - T \* 3 : 1 " 3% " : \* ' : \$ \$ 13 + % ; ""







"

"

^+((+C3%/"1B'"93-T+7\*-'"+"1B'"Z'3("3%"1B'"6T\$%83%SS3\$%"NO:(+DO '%1"6'Tl+\*;"6:\*3%/"  
[ '- '\$\*TB"6' 03%\$\*2'T17\*'E"9':\$\*10 '%1"+,">+0 07%3T\$13+%E"R%3S' \*-31D"+,">+(+\*\$8+E"  
=+7(8' \*E"5 : \*3("GM!G"

"

>\*3: : ('8" d3\$%10" 5 0 ' \*3T\$%"9 'T(3% '"3%"\$%"5 / '"+">+\*:"\*\$1'"U\$&' +S\*;"R%3S' \*-31D"+,"  
. \$8\*\$-E"W%83\$E"X\$%7\$\*D"GM!G;"

"

. 7(13I631'8"N1B%+/\*\$:BD"\$%8"93-T+7\*-'"5%\$(D-3-;"W%S31'8"6:'\$&'\*"S1")\* 'I>+%, '\* '%T'"  
b +\*&-B+:E"j . +S3%/" . '1B+8+(+/Dk"A\$13+%\$( ">+0 07%3T\$13+%-"5 --+T3\$13+% "5%7\$("  
. ' '13%/E" \_\*(\$8+E" ^2E"A+S' 04' \*GM!G;"

"

b +\*&:(S'T'">7(17\*' "\$%8"1B'"W-(\$03T"Y"\$8-T\$\*, "3%"6C'83-B"\$%8"9\$%3-B" \_\*/\$%3` \$13+% -;"  
9'-\$71'(-" ^\$T7(1D"+," . \$%\$/ ' 0 '%1E" . Td3(("R%3S' \*-31DE" . +%1\*\$E"6' :1' 04' \*GM!!;"

UB'"93-T+7\*-'"+"1B'"W-(\$03T"Z'3("3%"6T\$%83%SS3\$;"^+7\*1B'5%7\$("2'T17\*' "\$1"> [N9"  
K>'%1'\*,+\*" [ '- '\$\*TB"+%Nm7\$(31D"\$%8"93S' \*-31DL" g7' '%' . \$\*DE"R%3S' \*-31D"+,"2+%8+%E"  
A+S' 04' \*GM!M;"

"

UB'"Z'3("3%"1B'" b +\*&:(S'T';"2'T17\*' "8'(3S' \*' 8"\$-:"\$\*1"+,"1B'"5%7\$("d' %8' \*" <"W8' %131D"\$1"  
1B'" b +\*&:(S'T'"6' \*3' -E" [ \$84+7%8"R%3S' \*-31D"+,"A3h0 'h' %E"UB'"A' 1B' \*(\$%8-E" \_T1+4' \*"  
GMM?;"

"

R%S'3(3%/"N7\*+: 'c-">3S3(3` '8" ^\$T'0" d' %8' \*" [ '(\$13+% -E" A' C" W0 03 / \*\$%1- "\$%8"1B'"  
93-T+7\*-'"+"1B'"Z'3("3%"1B'"6T\$%83%SS3\$%" b +\*&:(S'T';"Y\*\$S\$\*8"=7-3% '--"6TB++(c-"  
93-13%/73-B'8" [ '- '\$\*TB"2'T17\*'E"Y\*\$S\$\*8"R%3S' \*-31DE" \_T1+4' \*GM];"

"

UB'" b \*313%/"+"1B'" b \$(("3-"3%"\$" ^+\* '3/%"2\$%/7\$/' ;"W%S31'8") ('%\$\*D'588\*' --"\$1"1B'"5%7\$("  
. ' '13% / -"+,"1B'"51(\$%13T"6TB++(-"+,"=7-3% '--E" b +(,S3(("E"A+S\$)6T+13\$E">\$%\$8\$;"  
6' :1' 04' \*GM];"

"

R%1\$%/(3%/" . '1B+8+(+/3T\$("W%1' \*T+% % 'T13+% -0"2+T\$("\$%8" d(+4\$("93(' 0 0 \$-"KC31B"

"

[ '-1+\*3%/" g 7\$(31D"1+" g 7\$(31\$13S "' [ '- '\$\*TB;"W%S31'8"2'T17\*' "\$1"1B'">+: '%B\$/ '%="7-3%' --" 6TB++(E">+: '%B\$/ '%E"9'T' 04'\*"GMMa;"

"

W%-7\*/ '%1"W 0\$/3%3%/-0")+ -1T+(+3\$(31D"\$%8" \_\*/\$%3`\$13+%\$( "5%\$(D-3-"KC31B"5%-B70\$%) \*\$-\$8L;"6C'83-B"6TB++(+,"NT+%+03T-"<="7-3%' --"5803%3-1\*\$13+% "KY5A i NALE" Y'(-3%&3E" . \$D"GMMa;"

"

9' -13%\$13+% "R%&+%C"0" A\$S3/\$13%/"\$ [ +71'"U+C\*\$8" . \$%\$/3%/"93S' \*-31D;"W%S31'8") ('%\$\*D" 2'T17\*' "\$1"1B'"9\$%3-B"W%-13171'"+" ,Y70\$%" [ 3/B1-"5%%7\$( "5C\*\$8">' \*' 0+%DE">+: '%B\$/ '%E" . \$\*TB"GMMa;"

"

. \$%\$/3%/"93S' \*-31D"\$%8"1B'"2+/3T"+,"^\$-B3+%;"W%S31'8"d7'-1"2'T17\*' "\$1" \_W6N"K\_ %1\$\*3+" W%-13171'"+" ,61783' -"3%"N87T\$13+%LE"R%3S' \*-31D"+,"U+\*+%1+E"^4\*7\$\*D"GMM!;"

"

= 'B3%8"1B'"=\*3/B1"^\$T'0"N%1' \*3%/"1B'"6B\$8+C" b +\*(8"+," b +\*&:( \$T'"93S' \*-31D;)" ('%\$\*D" \$88\*' --"\$1"1B'"! !1B" A+\*83T" . 3/\*\$13+% ">+," '\* '%T'E" d+1B' %47\*/E"6C'8' %E" \_T1+4' \*' ! \ \ \ ;"

"

93(' 0 0\$- "+," b +\*&:( \$T'"93S' \*-31D;"W%S31'8"('T17\*'E">+:%. \$5"C+ ': . %)Z#",&' (0,&-)512" >#; #2#,. )K>' %1' \*' ,+\*="7-3%' --"<")+ (3TD"61783' -LE"61+T&B+(0E" \_T1+4' \*' ! \ \ \ ;"

"

UB "U\*\$%-( \$13+% "+,"W%-131713+%\$( " . D1B"3%1+"61\*7T17\*' ;"W%S31'8"('T17\*'E"6>\_ [ N"K61+T&B+(0" >' %1' \*' ,+\* \_\*/\$%3`\$13+% [ '- '\$\*TBLE"61+T&B+(0E"^4\*7\$\*D"! \ \ \ ;"

"

6: '\$&3%/"\$4+71" [ '-3-1\$%T'0" [ +713%' \_ : : + -313+% "7%8' \*">+%8313+% - "+,"^( ' f34(" >\$: 31\$(3- 0;" W%S31'8"('T17\*'E"^\$T7(1'"8' -"-T3' %T' -"8'"(c\$803%3-1\*\$13+%E"2\$\$\$( "R%3S' \*-31DE" g 7'4'T">31DE" X\$%7\$\*D"! \ \ \ ;"

"

93-T+7\*-' "5%\$(D-3-"\$%8" b +\*&:( \$T'" [ '-3-1\$%T' ;"W%S31'8"2'T17\*'E"9' : \$\*10' %1"+," W%1' \*%\$13+%\$( =7-3%' --"\$%8"1B'"N%S3'+% 0' %1E" [ 71/' \*- "R%3S' \*-31DE" A+S' 04' \*' ! \ \ \ ?;"

"

61\* '1TB3%/"1B'"W\*+% ">\$/'0"NO : (+D' "' [ '-3-1\$%T' "1+"U'TB%+(+/3T\$( ">B\$% / ;"W%S31'8" 2'T17\*'E"9' : \$\*10' %1"+," 5TT+7%13%/"\$%8" . W6E"^\$T7(1D"+,"=7-3%' --E"R%3S' \*-31D"+," 5(4' \*1\$E" N80+%1+%E" A+S' 04' \*' ! \ \ \ ;"

"

[ '-3-1\$%T' "\$1"1B'" b +\*&:( \$T' ;"d7'-1"2'T17\*'E"6TB++(+,"NT+%+03T-"\$%8">+0 0' \*T3\$( "2\$CE" d+1'4+\*/ "R%3S' \*-31DE"6C'8' %E"5 : \*3(" ! \ \ \ ;"

"

R%8' \*-1\$%83%/" [ +713%' [ '-3-1\$%T' "\$1"1B'" b +\*&:( \$T' ;"23%&+ : 3%/"R%3S' \*-31DE"23%&+ : 3% /E" 6C'8' %E"5 : \*3(" ! \ \ \ ;"

"

>B\$%/3%/"Y [ . \_ \*3' %1\$13+% -"3%"\$") + -1I^+\*83-1" b +\*(8;"Y'(-3%&3">B\$04' \*' +," >+0 0' \*T'E" Y'(-3%&3E"^3%(\$%8E"^4\*7\$\*D"! \ \ \ ;"

"





"

d. ' : . "N) 4 5"6)#' : )F"(# '&G#%&5 '"

)

F"('# '&G#%&5 ')>%+ : &. 0)

"

F"('# '&G#%&5 ')

)

>1# ' : & '# - &#')05+ "' #, )5\$) = #' # ( . ; . '%)

)

H1# : . ; E)5\$) = #' # ( . ; . '%)05+ "' #, )

)

H1# : . ; E)5\$) = #' # ( . ; . '%) / . - &. Q)

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= J > ) \* + # % . " , E)

)

B + ; #' ) / . , # % & 5 ' 0)

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F"('# '&G#%&5 ')>1&. ' 1. )

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H : ; & ' & 0 % '# % & - . ) > 1&. ' 1. ) \* + # % . " , E)

)

J '\$ 5 " ; # % & 5 ' ) 9 . 12 ' 5, 5 ( E ) # ' : ) 7 . 5 < , . )

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05+ "' #, )5\$) = #' # ( . ; . '%) K : + 1 # % & 5 ' )

)

**B. A C**

\_ \* / \$ % 3 ` \$ 13 + % " \$ % 8 " . \$ % \$ / ' 0 ' % 1 " U B ' + \* D " 9 3 S 3 - 3 + % E " 5 T \$ 8 ' 0 D " + , " . \$ % \$ / ' 0 ' % 1 "

"

d ' % 8 " \* " \$ % 8 " 9 3 S ' \* - 3 1 D " 3 % " \_ \* / \$ % 3 ` \$ 13 + % - " 9 3 S 3 - 3 + % E " 5 T \$ 8 ' 0 D " + , " . \$ % \$ / ' 0 ' % 1 "

"

[ ' - '\$ \* T B " . ' 1 B + 8 - " 9 3 S 3 - 3 + % E " 5 T \$ 8 ' 0 D " + , " . \$ % \$ / ' 0 ' % 1 "

"

N \$ - 1 ' \* % " 5 T \$ 8 ' 0 D " + , " . \$ % \$ / ' 0 ' % 1 " 5 % % 7 \$ ( " > + % , ' \* ' % T ' "

"

**C. R G**

6 + T 3 \$ ( " 6 T 3 ' % T ' - " \$ % 8 " Y 7 0 \$ % 3 1 3 ' - " [ ' - '\$ \* T B " > + 7 % T 3 ( " K 6 6 Y [ > L " + , " > \$ % \$ 8 \$ "

"

A \$ 13 + % \$ ( " 6 T 3 ' % T ' " ^ + 7 % 8 \$ 13 + % " K A 6 ^ L E " R ; 6 ; 5 ; "

"

**D. B P**

6 \$ / " " ) 7 4 ( 3 T \$ 13 + % - "

"

\_ f , + \* 8 " R % 3 S ' \* - 3 1 D " ) \* ' - - "

"

"

[ +7l('8/ '" )74(3T\$13+% -"

"

NO '\*\$(8") 74(3-B '\* -"

"

N(- 'S3 '\* "6T3 '%T' ") 74(3-B '\* -"

"

6l\$%, +\*8"R%3S '\* -3lD" ) \*' --"

"

. ' 04 '\*E"U\$-&"^+\*T'"1+"T+% -13171'"\$%" 'C" 0 3%+\*"3%"^3(O "\$%8" . ' 83\$"61783' -E"GM!J"1+"GM!a;"

"

\_\*/\$%3` '\*E" 5 %%7\$("2 'T17\*'"3%"W%1 '\*%\$13+%\$(" 5 ,,\$3\*-E"GM!G"n":\*'- '%1;"

"

^+7%8 '\*"\$%8">+I+\*83%\$13+%"+,"!B'"6&380+\*" [ '- '\$\*TB"



"

>B\$3\*"+,"674I>+0 0311' '93\*'T1'8"C31B"1B'"U\$-&"+," b \*313%/"\$6'T13+%"+,"1B'"9':\$\*10'%1\$(  
6'(,I-178D" [' :+\*1'9 '\$(3%/"C31B^\$T7(ID")\*+,3('-E"9'S'(+: 0 '%1E" [' T\*7310 '%1"\$%8"  
[ '1'%13+%;"

"

>+\*83%\$1+\*E" [' - '\$\*TB" [+7%81\$4('E" . \$\$\$/ ' 0 '%1"<="=7-3%'--"9':\$\*10 '%1E"^\$(("GMMMI  
GMM!;"

**B. L**

"

. ' 04 '\*E"=7-3%'--IR%3S '\*-31D")\$\*1% '\*-B3:"W%313\$13S'E"!\\ ?IGMMM;"

"

5--+T3\$1'"93\*'T1+\*E"9+T1+\*\$(("6178'%1"9'S'(+: 0 '%1")\*+/\*\$OE"!\\ ?IGMMM;"

"

. ' 04 '\*E">+0 0311' ' ,+\*5 TT\*'831\$13+%K5 5>6=LE"W%1' ((' T17\$(">+%1\*34713+%-"^+T7-E"!\\ \\ I  
GMMM;"

"

>+\*83%\$1+\*E" d7'-1"6: '\$&'\*"^+\*7OE"!\\ ?IGMMM;"

"

**C. C**

"

. ' 04 '\*E"R%3S '\*-31D">+0 0311' ' d\*\$%13%/"U'%7\*'"\$%8")\*+0+13+%E"!\\ @I!\\ \\ H;"

"

5--+T3\$1'"93\*'T1+\*E"9+T1+\*\$(")\*+/\*\$OE"^\$T7(ID"+," . \$\$\$/ ' 0 '%1E"!\\ \\ aI!\\ \\ ];"

"

. ' 04 '\*E"R%3S '\*-31D"U\$-&"+\*T'+%"6' f7\$("Y\$\*\$-- 0 '%1E"!\\ \\ @I!\\ \\ ];"

"

. ' 04 '\*E"R%3S '\*-31D"U\*\$S' ("^7%8- ">+0 0311' 'E"!\\ \\ aI!\\ \\ H;"

"

. ' 04 '\*E") '\*,+\*0 \$%T'"NS\$(7\$13+% ">+0 0311' 'E"^\$T7(ID"+," . \$\$\$/ ' 0 '%1E"!\\ \\ @I