

!" 796.012.3

A' / 8 - = \$ C D / 4 ; 8 \$ '
E \$ 8 / = \$ C G / H ; I /

Национальный университет физического воспитания и спорта Украины (г. Киев)

“#%'()%)%'*,%- . 0*12* *34%6%'(78 3* 7*09,)7*
*2 *;7.,(' 3*;% ;%=>,)7*=? *2* 4*;* 6.'8@%, (
3*=96(' '(*2 649A(B 0 ? ; '(78 , 2* , *0 2.34., '%2((,
. (0%22* ; ; 0*D8E, 6%F;7,9ED%F 3* ; '% 2%A**

Герберт Уэллс

G'9=- (F 0 ? ; '(7%'8 (H-;3%4(0%27.7*4,)%'*,%- ; -*'*; ; . '82?0 (96(,(7%'82?0 0(4* ,*J4%-
2(%0, ,%'(-*69@2?F A90.2(;7 3* ;97(K. M. O.397(2 J. ' *1 (' *;2* , ? *7%)%;7,%22*F=(*0%B.2(- ((
-(2%J(*' *A((. PA* 3%49 34(2.6' %1.7=*'%% 160 2.9)2*-0%7*6()%;-(B 4.=*7, 02*A((J -*7*4?B *39=-
'(-* ,.2? J. 49=%1*0. M%,%4*>72*% 3* *B, .79 (92(-. '82*% 3* A'9=(2% 2.9)2*% 2.;'%6(% K. M. O.-
397(2. *- .J? , . '* (*- .J? , .%7 *A4*02*% , '(>2(% 2. 4.J,(7(=(*0%B.2(- ((-(2%J(*' *A((, -4.(-
2% . K. M. O.397(2 *=' .6. ' 96(,(7%'82*F ;3* ;*=2* ;78E , (6%78 3%4;3%-7(, ? 4.J,(7(> 2.9-(, 34*A2*-
J(4* , .78 %A' , .2?% 2.34., '%2(>. R(7.7%'E 34%6;7., '>%7;> ;*J6.22*% K. M. O.397(2?0 2.9)2*%
2.34., '%2(% - “”(2%7(-. 7%' .)%'*,%-.”, -*7*4*% > , (' *;8 , *3*'D%2(%0 ;(;%02*A* 3*6B*6. -
(J9)%2(E 6, (A.7%'82*F S92-T(()%'*,%-..

!.229E ;7.78E, , -*7*4*F ,0%;7(' ;8 02*A((6%((0 ? ; '(* 6, (A.7%'82*F S92-T(()%'*,%-.. ,>
3(; . ' ; * ,0%;72* ; * ; ,*(0 9)(7%'0 (2.;7.,2(-*0, 6*-7*4*0 =(*' *A()%;-(B 2.9-, 34*S%; ; *4*0,
J.;'91%22?0 6%>7%'0 2.9-((7%B2(- (-4.(2? K. M. O.397(2?0. M*, - ; *1. '%2(E, 34(1(J2(
, ?6.ED%A* ;> 9)%2*A* , 3*'2*0 * =U%0% 0? % % 2% 9;3%'(*39='(-* ,.78. V4%6' .A.%0.>) (7.7%'E
4.=*7. > , '>%7;> 34*6*'1%2(%0 7*A* T(-. (; ; '%6* ,.2(F 6, (A.7%'82*F S92-T(()%'*,%-.. , -*7*4?%
2.) .7? 2%; -*'8-* 6%;>7-* , '%7 2.J.6 , M.T(*2. '82*0 92(,%4;(7%7% S(J()%;-*A* , *;3(7.2(> (;3*4-
7. -4.(2?. X0%22* 3*H7*09 9 2.; ; %78 9, %4%22* ;78 , 7*0,)7* 34*='%0? , 3*62(0.%0?% , 6.22*F
;7.78% , 3*'9).7 ; ; %6. '82%F@% 34*6*'1%2(% (4.;34*;74.2%2(% , *='.;7(=(*0%B.2(- ((
-(2%J(*' *A((.

. Y, *'ET(>)%'*,%- . > , '>%7;> ; ; ,%*=4.J2*F '%7*3(;8E %A*
=(*' *A()%;-*A* 4.J,(7(>. M. 4.J' ()2?B % % H7.3.B=(*' *A()%;-(% * =U%-7? , ?3*'2>E7 4.J2**=4.J2?%
S92-T((. [. , ,) ;72* ;7(, *4A.2(J0)%'*,%-.. , -*7*4?F , 4>6% ;'9).% , 4. ; ; 0.74(. %7;> - . - 2.(=*%'%
; * ,4%0%22*% ; *J6.2(% 34(4*6? , , 34(2T(3% 34%6;7., '>%7 ; * =F * = ?)29E=(*' *A()%;-9E ;9D2* ;78.
] 62. - * ; * ,4%0%22?% 7%*4%7()%;-(% - *2T%3T((4.J,(7(> 1(, *F 34(4*6? ; %A*62> ;7.,>7)%'*,%- . (
%A* 1 (J2%6%>7% '82* ;78 , 4>6 ; .0?B 92(-. '82?B 7, *4%2(F=(*' *A()%;-*A* 4.J,(7(>.

_*,4%0%22.> 7%*4(> H, *'ET((; , (6%7%'8;7,9%7 * 7*0,)7* , 4.J,(7(% *4A.2(J0.)%'*,%-.. 4.J-
' ()2?% ;(;%0? , 2* ;>7 ; , *F ; *= ;7, %22?F , - .6. Y7* , , 3%4,9E *)%4%68, *72* ; (7;> - S*40(4* , .2(E
9)%'*,%-.. *34%6%'22*F ;(;%0? ' *- *0*T(F. 4* , %28 J2.2(F J. -*2*0%42* ;7%F 4.J,(7(> H7*F
;(;%0? ; %A*62> > , '>%7;> *34%6%'>ED(0 S.-7*4*0 4.J,(7(> ; * ,4%0%22*F T(, (' (J.T((_ H7*F
7*)-(J4%2(> , (; ; '%6* ,.2(> 0%B.2(J0* , S*40(4* , .2(> (4.J,(7(>9)%'*,%-.. 6, (A.7%'82*F S92-T((
; '%69%7 34(J2.78 , % ;80. .-79. '82?0 [2; 3].

! , (A.7%'82.> S92-T(> - *62. (J , .12%F@ (B S92-T(F *4A.2(J0.. # 34*T%; ; % H, *'ET((*4A.2(J0
)%'*,%-.. - . - *7-4?7.> , 2* *72* ; (7%'82* * = * ; * = %22.> =(*' *A()%;- .> ; (;%0. 34(*=4% ' ; 3* ; *=2* ;78
- . -7(, 2?0 6, (1%2(>0, = ' .A*6.4> 2. ' () (E HSS%-7(, 2?B 0%B.2(J0* , *=0%2. H2%4A(%F , %D% ;7, *0 (
(2S*40.T(%F ; *-491.ED%F ;4%6*F. a.4.-7%4 (J. -*2*0%42* ;7(*4A.2(J.T((H7(B 6, (1%2(F , *
02*A*0 *34%6%'>E7 7% 34*> , '%2(> 1 (J2%6%>7% '82* ;7(%A* *4A.2(J0., -*7*4?% 34(2>7* * =U%6(2>78
3*6 * =D(0 3*2>7(%0 - ?* \$ J / 8 (= > ' / I K ; : ' L \$ I & (= * (: / . _ * ; * > 2(% 6, (A.7%'82*F S92-T((*74.1.%7
;3* ; *=2* ;78 - *2-4%72*F =(*' *A()%;-*F ; (;%0? 9' . , '(, .78, 2.-.3' (, .78 (34%*=4.J* , ? , .78
4.J' ()2?% , (6? H2%4A((, %D% ;7, . ((2S*40.T((. Y7. ; 3* ; *=2* ;78 0*1%7 = ?78 (J0%4%2. ((J9)%2.
397%0 * =U%-7(, 2*A* (; ; '%6* ,.2(> 0%B.2()%;-(B 6, (1%2(F (649A(B S(J()%;-(B 34*> , '%2(F
=(*' *A()%;-*F ; (;%0? *4A.2(J0..

M.). '82?F 3%4(*6 4.J, (7(> 9)%2(> * 6, (1%2((7%' .)% '* ,%- . 9B*6(7 , 6. '%- *% 34* @ ' *% 0(4*- , *F 2.9)2*F 0?; '([1; 2].

#*34*;? (J9)%2(> 6, (1%2(F 7%' .)% '* ,%- . 4.2%% 4.; ;0.74(, . '(;8 , 7.- 2.J? , .%0*F 6(2.0(-)% ;-*F .2.7*0((. [%40(2 “.2.7*0(>” 2% 6.%7 , *J0*12*;7(3*'9)(78 (2S*40.T(E * 6, (1%2((7%' .)% '* ,%- .. !(2.0())% ;-.> .2.7*0(> (*7 ' .7(2. дина с ; ('. , 34())(2. 6, (1%2(>) >2'>%(; ;0с6 —I3(M0

3(;.2(%;74%2(>)%',%)%);-A*7%'.,%A*-*;7%F,(B;6(2%2(F(0?@T,2974%22(B*4A.2*.,#;%
*@(=(4.J')2?%J.=916%2(>,-*7*4?2.-*3('(;8,.2.7*0((6*2%A*,='.A*6.4>H7*0974969,
=?'(9;74.2%2?.

!1*,.22(K'8S*2;*g*4%'(1608c1679AA.)2.3(;.';7.,@F2.;%A*62>-'.;()%);-(0(J,%;7-
2?F7496“]6,(1%2((1(,*72?B”,,-*7*4*0*2,3%4,%9-.J.'2.3*'*1%2(*=D%A*T%274.7>1%;-
7(,%7%')%)*,%,34*(J,%'-'.;:(S(-.T(E6,(1%2(F)%)*,%. (1(,*72?B,-*7*4.>(;3*'8J9%7;>(,
,2.;7*>D%%,4%0>.

#?6.ED(F;>B(494A(.2.7*0M.X.V(4*A*,(1810c1881AA.)>(';>;*J6.7%'07*3*A4.S()%);-
-F.2.7*0((.PA*-2(A.“[3*A4.S()%);-.>.2.7*0(>”,('E;74(4*,.22.>4.J4J.0(,34*,%6%22?0(
)%4J.J.0*4*1%22*7%')%)*,%,74%B2.34.,'2(>B,-.(02*A(%649A(%A*2.9)2?%2.7*0(-
)%);-(7496?,2%974.7('.;,*A*J2.)%2(>(,2.@,%4%0>.V(4*A*,*6(2(J3%4,?B9-.J.'2.;>J8
S*40?-*;7%F;,*3*'2>0*F(0(S92-T(%F,;)(7.>),*7*2.4912?F,(6-.16*F-*;7(%;787*'8-
*;*9D%;7,%22.>(6%>%S92-T(*2.'82*A*2.J2.)%2(>.

V.h.O%;A.S7(1837c1909AA.)c,?6.ED(F;>.2.7*0(*=D%;7,%22?F6%>7%'8,*;2*,*3*'*12(-
2.9-(*S(J()%);-F-9'8794% c4.J4.=*7.'7%*4%7()%);-(%34%63*;'-(6'>;*4%0%22*A*4.J,(7(>
S(J()%);-*A* ,*3(7.2(>(;3*47..O%;A.S7*0;*J6.2*9)%2(% *S92-T(*2.'82*F *=9;*',%'22*;7(
S*40? (;74%*2((-*;7%F, ;9;7.,* (0?@T.

;,*%06,9B7*02*07496%“]2* ,?7%*4%7()%);-F.2.7*0((” (1892A.)V.h.O%;A.S7 *=U>;2>'
;74%2(%7%')%)*,%.2%7*'8-*;7*)-(J4%2(> ,?3*'2>0?B(0S92-T(F(;>J(; ,')(>2(%02.
2%A* *-491.ED%F ;4%6?,2*(;7*)-(J4%2(> *=D%=(*'A()%);-(B.J.-*2*0%42*;7%F.O%;A.S7 ;)(7.',
)7* *4A.2(J04.J,(.%;>((J0%2>7;>3*6 ,')(>2(%0*-491.ED%F %A* ;4%6? (,4%J9'87.7%
934.12%2(F%A* *4A.2*.,# ;>J(;H7(0*2*;*=%22* =*'8@%J2.)%2(%34(6.,.'4.J'())2?0.;3%--
7.034.,('82*F3*;7.2*,-(S(J()%);-*A* ,*3(7.2(>6'>2*40.'82*A*4.J,(7(>*4A.2(J0..PA*
4.=*7?：“]=*72*%2((.2.7*0((-S(J()%);-*09,*;3(7.2(E”,“i9-*,*6;7,*3*S(J()%);-*09,*;3(-
7.2(E6%7%F@-*'82*A* ,*J4.;7.”,“k-*'82?7(3?”(649A(%2%;'(J2.)(7%'82?F,-'.6,4.J,(7(%
2.9)2?B*;*2*,S(J()%);-*A* ,*3(7.2(>.

1.h.X.,2(T-(F(1895c1969AA.);?A4.'=*'8@9E4*'8,4.J,(7((S92-T(*2.'82*F.2.7*0((
)%)*,%.34(0%2(7%'82*-J.6.).0;3*47(,2*F34.-7(-.]2,3%4,%?34%6*'1('0%7*6.2.7*0()%);-
-A* .2.'(J.3*'*1%2(F(6,(1%2(F7%' ;3*47;0%2..

!,(A.7%'82.>S92-T(>*4A.2(J0.)%)*,%.34%6;7.,'>%7;*=-F;'*129E;(;7%0902*A**=4.J2?B
;7*4*2 (B.4.-7%4(;7(-%A*6%>7%'82*;7(.#2.;7*>D%%,4%0>,-;*1.'%2(E,2%34%6;7.,'>%7;>
,*J0*12?0,--*0-7* *62*0*34%6%'%2((('(3*2>7((6.78%3*'29E,; ;*=U%0'ED9EB.4.-7%-
4(;7(-9.1% ;%A*62>)4J0%42* =*'8@%4.J2**=4.J(;,%6%2(F *=*4A.2(J0.)%)*,%.34%6;7.,-
'>%72%-*7*4?%J.74962%2(>6'>,?>2%2(> *-2-4%72?B B.4.-7%4(;7(-2%7*'8-* ,;%A* *4A.2(J0.,2*
6.1% %A* *76%'82?B S92-T(F.X0%22*3*H7*09;3%T(.'(;?;%F).; ;74%0>7;>34%6;7.,(786*;7.7*)-
2*)%7-(% (7*' -*, ?% (2;7490%27?6'>=*'%% ;*,%4@%22*F3*2>7(F2*F*34%6%'%22*;7(B.4.-7%4(-
7(-4.J'())2?B H%'0%27*,6,(A.7%'82*F S92-T()%)*,%. [2;3].

.G\$'(8\$:/-H7*2.9.- *=*62*0(J2.34.,'%2(F9)%2(>*
6,(A.7%'82*F S92-T()%)*,%. [2.(J9).%7*;*=%22*;7(;74%*2(>7%')%)*,%.=(6(2.0(-9(
;7.7(-9*3*42*-6,(A.7%'82*A*.33.4.7.,4.J'())2?B9;*',(>B%A*3* ;,%62%,2*F1(J2(, ;3*47(,2*-
3%6.A*A()%);-F,S(J-9'8794*F,34*(J,*6;7,%22*F(0%6(T(2;-*F34.-7(-.]62.-*7%')%)*,%.
34(H7*04.;;0.74(,%;>2%--7*)-. ('(;7%0.7%)*,%. --T%'*;72?F0.-4*;-*3()%);-(F
*=U%-7, , -*7*4*0(J9).%7;>6,(1%2(>%A* *76%'82?B).;7%F(H%'0%27*,0%B.2()%);-%;*;*7*>2(%
-*7*4?B;9D%;7,%22*J.,(;(7*72.).'82?B9;*',(F(J0%4%2(>.

(J9)%2(>-(2%7(-(-;74%2(%(6,(1%2(>7%')%)*,%. (*76%'82?B %A*).;7%F --
T%'*;72*F(;7%0? ,34*;74.2;7,% (,*4%0%2(.]2*2?0 >,'>%7;>.2.'(J
6,(1%2(F(3*'*1%2(F)%)*,%. ,34*;74.2;7,% *72*;7%'82* ;*0.7()%);-F(3*6,(12*F(2
3*6,(12*F);(;7%0--*46(2.7%A*7%' ..

i.;;0.74(,.>7%')%)*,%. (%A*6,(A.7%'829E.-7(,2*;78 ; ;*,4%0%22?B0%7*6*'A()%);-(B
3*J(T(F,0*12* -*2;7.7(4*,.78,)7*7%40(2:\$'(8\$:/2.(=*'%% (2S*40.7(,%26'>6*7.'82*A* (34%
60%72*A* *=U>;2%2(> ;9D2*;7(6,(A.7%'82*F S92-T()%)*,%. [23*J,*'>%7, ;*62*F;7*4*2? ,
6*;7.7*)2* ;74*A*3*6*F7(-S(J()%);*09 ;*6%41.2(E ;.0*A*3*2>7(>“6,(1%2(”,. ;649A*F c
,2%;7(, ;0?;'H7*A*7%40(2.7*),7*34(,2*;7> ,2%A*J2.2(>*%;7%;7,%22?B6,(1%2(>B ;*=;7,%22*
1(*A* *4A.2(J0..

]4A.2(J0)%'*,%-. , - - (J,%;72*, 0*1%7 =?78 34%6;7., '2 , ;*,4%0%22*F 2.9-% 4.J'())2?0(;3*;*=.0(, *=U%-7(,2*B.4.-7%4(J9ED(0(4.J2**=4.J2?% %A*H' %0%27?. [.-, ,).;72*;7(, %A* 0*12* *3(;? ,.78 , 7%40(2.B, B.4.-7%4(J9ED(B 0(-4*,-*3());-9E (9'874.0(-4*,-*3());-9E ;749-7949, .7.-1% 4.J'())2?% -.)%;7,%22?% (-*'());7,%22?% %A* B.4.-7%4(;7(-.]62.-*, - - (J,%;72*, ,;>-*% 7.-*% *3(;.2(% 6*'12* =?78 2%4.J4? ,2* ;,>J.2* ;* ;749-794*F %A* 6%>7%'82*;7(, *3(;? ,.0*F 34(3*0*D(H7(B B.4.-7%4(;7(-. _ H7*F 7*)-(J4%2(>, 34%6;7., '>%7 J2.)(%7'82?F (27%4%; =*'%% 6%7.'82*% 4.;;0*74%2(% ; *62*F ;7*4*2? 0*4S*'A());-(B (S92-T(*2.'82?B, . ; 649A*F ;7*4*2? S(J());-(B ;,*F;7, 7%' . 1(,*A*)%'*,%-. P;'(H7(;,*F;7, . (;'%6*,.78 , ;(;%702*0 %6(2;7%, 0*12* 3*'9)(78 6*;7.7*)2* *4(A(2.'829E 0*6%'8 J2.2(F * 1(,*0 7%')%'*,%-. # ;*6%41.2((H7*F 0*6%'(, , 7.-*0 ;'9).% , 6*'12? =?78 ;,%6%2(> * S(J());-(B B.4.-7%4(;7(-. B 6,(1%2(F)%'*,%-. , . 7.-1% * %A* =(,*'A());-(B, ,).;72*;7(S92-T(*2.'82*-0*4S*'A());-(B *;*=22*;7>B. _ H7*F 7*)-(J4%2(>, ;7.2*(,7;>3*2>72?0 7.-*% 2.34., '%2(% , - - -(2%7(-. 1(,*A* 7%')%'*,%-. .

@ (4* *0 ;0? ;'%' ;* ,. -(2%7(-. >, '>%7;>).;78E 0%B.2(-, , -'E).ED9E 6(2.0(-9 (;7.7(-9. _ H7*F 7*)-(J4%2(>, %;'(A*,*4(78 * 7%')%'*,%-. , ,3*'2% 4.T(*2.'82?0 0*1%7 *-J.78;> 3*6B*6 -H7*09 3*2>7(E, -*7*4?F *B, .7? , %7 -(2%0.7(-9, 6(2.0(-9 (;7.7(-9 7*A* *=U%-7., -*7*- 4?F *62*,4%0%22* 0*1%7 >, '>78;> (34%60%7*0 =(,*'A());-(B 2.9-.]62.-* 34(H7*0 ,3*'2% 6*39;7(0* *62*,4%0%22*% (;'%6*,.2(% (=,*'A());-(B, (0%B.2());-(B ;,*F;7, 7%')%'*,%-. , -*7*4*% >, '>%7;> 7.- (0 1% 0.7%4(. '82?0, S(J());-(0 7%'*0, - - (0 >, '>E7;> (, ;% 649A(% 7,%46?% 7%' .. M* , 7* 1% ,4%0> ;* ,%4@%22* *)%, (62*,)7* 7%')%'*,%-. *=' .6.%7 02*A(0(7.- (0(;,*F;7, - 0(, -*7*4?B 2% (0%E7 , ;% 649A(% (J,%;72?% , 34(4*6% 7%' .. V*H7*09 ,3*'2% 3*2>72*,)7* 6'> 7*A*,)7*=? 3*'9)(78 -.-9E-'(=* 6*;7.7*)2* ;* ,%4@%229E 0*6%'8 ;74*%2(> 7%')%'*,%-. (%A* 6,(1% 2(F, 2%*=B*6(0* 34(2>78 *34%6%' %22?%, 6*;7.7*)2* ;74*A(% *A4.2())%2(> (6*39D%2(> .

_ * ,%4@%22* *)%, (62*,)7* , ;% 4.2% (J,%;72?% 0%7*6*'A());-(;3*;*=? (34(%0? *3(;.2(> 7%')%'*,%-. (%A* 6,(1%2(F, 34(0%2>0?% , 0*4S*'A((, S(J(*'A(((=(*0%B.2(-, , 2.;7*>D%0 ;'9).% 2% 0*A97 >, '>78;> ,3*'2% -*44%-72?0(. 1*4S*'A());-*(S(J(*'A());-*(*3(;.2(% 7%')%'*,%-. , - - (J,%;72*, ;74.6.%7 ;'(@- *0 =*'8@ (0(2%7*)2*;7>0((2% 0*1%7 =?78 (;3*'8J*, .2* 34(34(0%2%2((;%48%J2?B .2.'(7());-(B 0%7*6*, (3*6B*6*, . _ 649A*F ;7*4*2?, =(,*0%B.2());-(% B.4.-7%4(;7(- (6,(1%2(F (3*'1%2(F 7%')%'*,%-. 2% 0*A97 =?78 34(J2.2? 7.- 1% , 3*'2*F 0%4% .6%- ,.72?0(34((B ;3*'8J*, .2((h(J());-(;74*A(% 0%7*6? *3(;.2(> 6,(1%2(F (3*'1%2(F 7%')%'*,%-. 2% >, '>E7;> 7.- * ,?0(34(*3(;.2((%A* 0*4S*'A());-(B (S(J(*'A());-(B 3.4.- 0%74*, 3*,-*'8-9 , =(,*0%B.2(- 4.;;0.74(, .E7;> 6,(1%2(> . =,*' E72* 7,%46?B 7%' , -.-* ,?0, - - (J,%;72*, 2% >, '>%7;> -.- 7%')%'*,%-. , 7.- (*76%'82?% %A*H' %0%27? . " . - (J,%;72* , =(,*0%B.2(-, 7%')%'*,%-. (4.J'())2?% %A*H' %0%27? 0*A97 0*6%'(4*,.78;> , (6% *=U%-7*, 0.7%4(. '82*F (' (;(;%70? 7.- 2.J?, .%0?B 0.7%4(. '82?B 7*)-.]62.-*, - - (J,%;72*, 7%')%'*,%-. , ;*62*F ;7*4*2?, 2%, *J0*12* 6*;7,%42* 34%6;7., (78 , , (6% . =,*' E72* 7,%46*A* 7%' . (' (;(;%70? 7%' . "4*0% 7*A*, 34(, ;%B ;3*;*=. B *3(;.2(> 7%')%'*,%-. (%A* 6,(1%2(F ;'%69%7 9)(7?, .78 3.4.0%74? 6,(1%2(F 2% 7*'8-* %A* *76%'82?B 7*)-%, 2* (6,(1%2(% 4>6. ;* ,%4@%22?B T%' ;72?B H' %0%27*, , 7.- (B -.-, 2.34(0%4, 49-. , 2*A., 79*', (D% (7.6. !49A(0(;* ,.0(, (2S*40.T(> * 6,(1%2((*76%'82?B 7*)-% 7%')%'*,%-.).D% , ;%A* *-J?, .%7;> (;-. 1%22*F (2%6*;7*,%42*F. # ;% H7* *)%28 9 ;'12>7 34%6;7., '%2(% * 7%')%'*,%-. , * , ;%F 6*;7932*F '(7%4.794%. V*H7*09, *)%, (62*,)7* 2.;7.' * ,4%0> 0%7*6*'A());-(=*')%7-*A* (*=U%-7(,2*A* .2.'(J. 7*A* 3*2>7(F2*A* .33.4.7., -*7*4?F B.4.-- 7%4(J9%7 6, (A.7%'829E S92-T(E)%'*,%-. .

".16.> 2.9-. (0%7 ;,*F *=U%-7 (34%60%7 (J9)%2(> (3*2>7(F2?F .33.4.7, -*7*4?F 9;74.2>%7 4.J'())2*% 3*2(0.2(% (7*'-. ,.2(% 34*S%;;(*2.'82?B 7%40(2*, 34(*=D%2((;3*T('(;7*, . 34%3*6., .7%'%F ;9).D(0(>. # ;.0*0 @ (4* *0 ;0? ;'%' ""*34%6%' %2(% 3*2>7(>” c H7* 'A());-.> *3*4.T(>, , 34*T%; ;% -*7*4*F 4.;-4?, .%7;> ;*6%41.2(% 3*2>7(>. _ '%69%7 *70%7(78,)7* ""*34%6%'-% 2(% 3*2>7(> 2% ;78 4.J (2., ;%A6. 6.22*% (2%(J0%22*%”.

A?/48/L\$1 - ;(;%0. 0%B.2(J0*, 6, (A.7%'82*F S92-T((, *=%;3%)(, .ED.> 7.-*% (J0%2%2(% % B.4.-7%4(;7(- ('(;3*;*=* , 34*>, '%2(>, -*7*4*% 2.34., '%2* 2. 3*, ?@%2(% HSS%-7(,2*;7(% S92-T(*2(4*,.2(> ; T%'8E 3*66%41.2(> A*0*%;7.J(;. *4A.2(J0.)%'*,%-. (%A* 2%4., 2* , ;2*A* 7%40*6(2.0());-*A* ;* ;7*>2(> 3* *72*%2(E - *-491.ED%F ;4%6%.

\$S\$-@(+/'\$&(2:\$ (+/6/:8(6\$28\$:\$?*\$T('\$C &(-*(:/ - H7* 0%4? (JO%22(> 0%B.2())%*-A* ;*7*>2(> 6, (A.7%'82*F S92-T(()%*',%-. 2. 94*,2%T%*'72*A* *4A.2(JO. (0.7%4(. '82*F 7*)-(('(;(%7%0? 0.7%4(. '82?B 7*)%-.).

SU286- 8/ - H7* 7.-%* -.)%;7,* , -*7*4*% *34%6%'>7;> ; -*4*78E 6, (1%2(> T%274. 0.; ; 7%' .)%*',%-. ,%A* *76%'82?B J, %28%, ((7*)%- 7%' . , (J=4.22*F ;(%7%0% *7;)%7., . 7.-1% ; -*4*78E ('(,4%0%2%0 %A* 6, (A.7%'82*F 4% .-T((, *7,%7 2. -.-*F-' (=, 2%@2(F 4.J64.1 (7%'8.

EU'-2=\$*-28> - H7* 7.-%* 6, (A.7%'82*% -.)%;7,*)%*',%-. , -*7*4*% B.4.-7%4(J9%7 %A* 4.=*7*- ;3*;*2*78 (0*1%7 34*>, '>78;> (0 2. 34*7>1%2((*34%6%'22*A* ,4%0%2(, *T%2(78 %A* 0*12* 7*8-* 34(;74*A*F 4%A'.0%27.T((J.6.22?B =(*0%B.2())%*- (B B.4.-7%4(;7(- 6, (A.7%'82?B 6*F- ;7, (F.

V\$I:-28> - H7* ;3*;*2*78)%*',%-. , ?3*'2>78 6, (1%2(> , ;9;7., .B ; , *JO*12* =*'8@%F .03' (796*F.

V-@(-28/#\$2 - ;*7*>2(% 6, (A.7%'82*F S92-T((, *=%;3%)(, .ED% 3*7*>2;7,* ,2974%22%F ;4%6? *4A.2(JO. , 9; *', (>B %A* .-7(, 2*A* (6(2.0())%*-A* ,J. (0*6*F;7, (> ; , 2%@2*F ;4%6*F.

V6/*\$8/L\$-' 'U(#/\$@-?(C28*\$I 7%' .)%*',%-. B.4.-7%4(J9E7;> ;**72*%@2(%0 %A* A4. , (7.- T(*22*F 0.; ; ? ; 0.; ; *F d%0' (, . 7.-1% ;**72*%@2(%0 0.; ; %A* *72* ;(7%'82* 3*6, (12?B) ;7*F - J, %28% , , -*7*4?% *34%6%'>E7 * ;*=22* ;7(0%7.=*' (JO. %A* *4A.2(JO. , 7(3 , ? ; @%F 2%4, 2*F 6%>7%'8- 2* ;7((%A* 6, (A.7%'82?% , *JO*12* ;7(.

V6/*\$8/L\$-' 'I X'(6J\$I - *' ()%;7, %22* B.4.-7%4(J9%7 J.3. ; 4.=*7* ;3*;*2* ;7(;(%7%0? , *=' .- 6.ED%F 2% -*7*4*F 0. ; ; *F (3*62>7*F 2.6 d%0' %F ((;(%7%0? , ;*7*>D*F (J *76%'82?B 7*)%)2?B 0. ; ; , J. (0* ; , >J.22?B 0%169 ; *F 9349A(0 (; ('.0(, ((;(%7%0? , 0. ; ; ? - *7*4?B , J. (0*6*F ;7, 9> 0%169 ; *F , ; , %4@.E7 *34%6%'%229E 4.=*79 J. ;)%7 4%.-T((; ; * (B ; , >J%F.

Y*\$J/8(=>' /I /: 8\$*' -28> - H7* =(*' *A()%;- (6%7%40(2(4* , .22?F 94* , %28 34*>, '%2(> 6, (A.- 7%'82?B ;3*;*2* ;7*F (6, (A.7%'82?B , *JO*12* ;7*F , *=9; *', '%22?F A%2*7(3())%*- (0((S%2*7(3(-)%*- (0(* ; *%22* ;7>0(*4A.2(JO.)%*',%-. .

Y*\$J/8(=>' U(*-#@- T' -28\$ - H7* ; *' 1(, @(% ; > , *4A.2(JO%)%*',%-. , 34*T% ; ; S('*A%2J. , *27*A%2J. , *=9)%2(> (74%2(4* , - (4%'82?% 34%63* ; ?' - (- , ?3*'2%2(E 6, (1%2(F ; *34%6%'%2- 2?0(=(*0%B.2())%*- (0(B.4.-7%4(;7(- 0(.

Y*\$J/8(=>' -(?(C28*\$ (- H7* 7.-%* 34*>, '%2(% 6, (A.7%'82*F .-7(, 2* ;7()%*',%-. , -*7*4*% (0 * ; *J2.2* (T%'%2.34. , '%22* 2. 4%@2(% -.-*F-' (= - *2-4%72*F 6, (A.7%'82*F J.6.)((7%B2())%*- %6*F ;7, (% , ; *4% , 2* , .7%'82*% 6*F ;7, (% - T%'8 74%2(4* , *)2*A* 34*T% ; ; .)

Y*\$J/8(=>' /I ?\$28- '\$I - *62* , 4%0%22*% ; *4.D%2(% 0?@T .A%2(;7* , (.27.A%2(;7* , , ; *34*- , *16.%7;> ; 3.J0*0 (= ? ; 74?0(7(- ** =4.J2?0(6, (1%2(>0() , 0?@%)2*F .-7(, 2* ;78E , 6' (7%'8- 2* ;78E *7 1 ; (=*' %%%.

Y*\$J/8(=>' U(24-2-I' -28\$ - H7* 3*7%2T(.'82.>, 2* 2% 4%' (J* , .22.> 34%64. ; 3*' *1%22* ;78)%*',%-. - 7*09 (((2*09 34*>, '%2(E 6, (A.7%'82*F S92-T((.

Y*\$J/8(=>' U(28(6- 8\$4\$ - *62**=4.J2* 3* , 7*4>ED(% ; > 2%T%'%2.34. , '%22?% , =% ; ; 0? ; '%2- 2?% 6, (1%2(>, 2%4%6- * 34*6*'1.ED(% ; > 6' (7%'82*% , 4%0> , 9D%4= 649A(0 S*40.0 6, (A.7%'82*F .-7(, 2* ;7()%*',%-. .

Y*\$J/8(=>' U(:/&(28*/ - H7* *76%'82?% , -.)%;7, %22* 4.J' ()2?% ;7*4*2? 0*7*4(- ()%*',%-. , -*7*4?% 34*>, '>E7;> (0 , *62(B (7%B 1% =(*0%B.2())%*- (B B.4.-7%4(;7(- B, (0%E7 *6(2 (7*7 1% (JO%4(7%'8 (; B*62?% .2.7*0())%*- (%, =(*' *A()%;- ((3 ; (B())%*- (% 0%B.2(JO? *% ; 3%)%2(> (4%' (J.T((.

Y\$' /@/\$&(2:\$ (+/6/:8(6\$28\$:\$?*\$T('\$C &(-*(:/ - H7* 0%4? , 2%@2(B (, 2974%22(B , J. (0*6*F ;7, (F)%*',%)%*-A* 7%' . (0.7%4(. '82*F ;(%7%0?) , *34%6%'>ED(% 34()2? %A* 6, (1%2(F.

Z(28 - -9'87942* 6%7%40(2(4* , .22*% H- ; 34% ; ; (, 2*% 6, (1%2(% , *=*J2.) .ED% %34%6%'%22*% 69@% , 2*% , ; *7*>2(% , ; 3*'8J9%7;> *=?)2* 6' > 34(6.2(> 6*3*'2(7%'82*F , ?4.J(7%'82* ;7(4%)(.

[@46\$' 8\$'J - *62. (J S*40 .6.37.T((, ?4.=*7.22.> 9)%*',%-. , 34*T% ; ; S('*A%2J. . V4*>, '>%7;> , ,) ; 72* ;7(, , , (6% 34(, >J.22* ;7(4%=-%2- . - 0.7%4((*7T9). X0%7 =*'8@*% J2.)2(% , B*6% 2*40. '82*A* S*40(4* , .2(>)%*',%-. , 34*T% ; ; *27*A%2J. .] ; 2* , .2. 2. A%2*7(3())%*- (B (S%2*7(3())%*- (B 2*F4*=(*' *A()%;- (B 0%B.2(JO.B 34(, ?-.2(> 4.J' ()2?B ; (%7%0 1(, *A* *4A.2(JO. # 34*T% ; ; 4.J, (7(>)%*',%-. J. -'.6? , .%7;> , * ; 2* , 9 0%B.2(JO* , 3.0>7(. # * 02*A*0 ='.A*6.4> H7*09)%*',%-. ; 3* ; *%2 * =9) .78;>.

G\$'(@/8\$&(2:\$ (+/6/: 8(6\$28\$:\$?*\$T('SC &(-*(:/ - H7* 0%4? 3*'*1%2(> (6, (1%2(> , 34*;74.2;7,% (, * ,4%0%2((34*;74.2;7,%22?%, ,4%0%22?% (34*;74.2;7,%22*-,4%0%22?%) 7%' .)%*',%-. (0.7%4(. '82*F 7*)-((' (;(;7%0? 0.7%4(. '82?B 7*)%-.).

Кинетический потенциал организма человека – H7* =(('*A(%);-(F 4%J%4, *4A.2(J0., 3*7%2T(- . '82.>, 2* 2% 4%.' (J*,.22.> 34%64.;3*'*1%22*;78) %*',%-. - 7*09 (' ((2*09 34*>, '%2(E 6, (A.- 7%'82*F S92-T((.

G--6?\$/L\$1 ?*\$T('SC - 9; '* ,2?F 7%40(2, 3*- .J?, .ED(F ;7%3%28 ;*A'. ;*,.2(> -(2%0.7(-)%);-(B (6(2.0(%);-(B B.4.-7%4(;7(- 6, (A.7%'82*A* 6%F;7, (> 34(4%@%2((6, (A.7%'82*F J.6.)((-**46(2.7 7*)%- 7%' ., 74.%-7*4(F, 9A*', , ;9;7.,.B, ; *4*;7%F (9; - *4%2(F 6, (1%2(> 0.; ; J,%28%, 7%' ., 6%F;7,9ED(B ;(' , 0*0%27* , ;(' , (2%4T(*22?B B.4.-7%4(;7(- 6, (1%2(> J,%28%, 7%' . (7.6).

G--6?\$/L\$- ''U(24-2-I'-28\$ -H7* 7.- (% ,4*16%22?% 34%63*;?' -(, *4A.2(J.T((6, (A.7%'8- 2*F S92-T((, -*7*4?% *34%6%'>E7 %%;**7,%7;7,(% =(*0%B.2(%);-(0 74%=*,.2(>0 - 4%.' (J.T((6, (A.7%'82?B J.6.2(F, (0%ED(B *34%6%'22?% -(2%0.7(%);-(% (6(2.0(%);-(% 3.4.0%74?, (34(H7*0 3*J, *'>E7) %*',% -9 (J=(4.78 *37(0. '82?%;3*; *=? 4%@%2(> 6, (A.7%'82?B J.6.), 0(2(0(J(49> ;,* (H2%4A%7(%);-(% J.74.7?.

G--6?\$/L\$- ''I 286;: 8;6/ ?*\$T('SC - H7* J.-*2 (27%A4.T((-(2%0.7(%);-(B (6(2.- 0(%);-(B ;749-794 , %6(2*F ;(;7%0% 6, (A.7%'82*A* 6%F;7, (>.

D-: -28> - H7* 7.-%* -.)%';7,* , -*7*4%* 3*J, *'>%7) %*',% -9 4%@.78 6, (A.7%'82?% J.6.)(, B.4.-7%4(J9ED(%);> =*'8@*F ;' *12*;78E, =?;74*F ;0%2*F ,2%@2(B 9; '* , (F (74%=9ED%* *7 2%A* ;**7,%7;7,%22* =?;74*F (;*A'. ;*,.22*F ; (J0%2>ED(0(;> 9; '* , (>0(;0%2? B.4.-7%4(;7(- **46(2.T(*22*F ;749-794? (6, (A.7%'82*A* ;*7.;. ; ,*(B ;*=;7,%22?B 6%F;7, (F.

D-: -@-L\$\$ - .7(,2?% 3%4%0%D%2(>7%' .) %*',%-. , 34*;74.2;7,% 34(3*0*D(4.=*7? 0?@T , 4.J'()2?B 9; '* , (>B, J. (0*6%F;7, (> ; A4., (7.T(*22?0 3*'%0 d%0' (.

\\ '\$4;=IL\$\$ - **46(2.T(*22*-' *12?% 6, (1%2(> -(;7((3. '8T%.,

\\ '(6'U(?*\$T('\$I - 2%*=?)2.> (34)96' (, .>, ,?)942.>) S*40. T%'%2.34., '%22*A* 6, (A.- 7%'82*A* 6%F;7, (>, *J2(-.ED.> , 4%J9'87.7% ,-'E)%2(> ;7%4%*7(32*A* 6%F;7, (> , T%'%2.34., - '%22% 3* , %6%2(%).

\\ (8/I-=\$#@ - 34*T%; ; 6, (1%2(> 1(. *F 0.7%4((2. ;9=0(-4*94*,2% %% *4A.2(J.T((, -*7*4?F ;*34*,*16.%7;> , ?6%'%2(%0 B(0(%);-*F (7%3*'* , *F H2%4A((, 34%,4. D.%0*F ,3*; '%6;7, ((, H%' -74*- 0. A2(729E H2%4A(E -' %7*- , 7-.2%F (*4A.2*, , *% ;3%)(, .ED9E (B 4.=*7*;3*; *%2*;78, 34%*=4.- J9%09E, , ; , *E *)%4%68, 6. '%% , A4., (7.T(*229E H2%4A(E , ;%A* 7%' ., *% ;3%)(, .ED9E 6, (1%2(% 2. 0. -4*94*,2% *4A.2(J.T((*4A.2(J0.) %*',%-. .

\\ (+/'\$&(2:\$ (?*\$T('\$I - (J0%2%2(3*'*1%2(> 7%' . (0.7%4(. '82*F 7*)-((' (;(;7%0? %A* 0.7%4(. '82?B 7*)%-.); 7%)%2(%0 ,4%0%2(*72*; (7%'82* 649A(B 7%' (;(;7%0 *7;)%7.). V*6 6, (1%2(%0 3*2(0.E7;> ;;>-(% (J0%2%2(> , *4A.2(J0%, . 7.-1% ;0%2. %A* ;* ;7*>2(F.

\\ -8-6\$:/ - ;* , *-932*;78 (;(;7%0.) 6, (A.7%'82?B ;3*; *%2*;7%F (6, (A.7%'82?B , *J0*12*;7%F) %*',%-. .

^ (J(' 86-4\$1 - 0%4. , %4*>72*;7(3*66%41.2(> *34%6%'22*A* ;* ;7*>2(> ;(;7%0? , 2%;0*74> 2. S(J(%);-(% 34%3>7;7, (> - %% ;9D%;7,* ,.2(E (2.34(0%4 A*0*%;7.J(; *4A.2(J0., ;7.=('82*;78 =(*0%B.2(%);-*F ;(;7%0? 934. 12%2(> (7.6).

' 8-J(' 8\$&(2:\$ 4-2=(?-/8(=>' -(K-6@\$6-*/'\$(:\$'(8\$&(2:-J- 4-8('L\$/=/ -6J/'\$#@/ &(-*(:/ - H7* 34*T%; ; %A* 4.J, (7(> , 9; '* , (>B %;7%;7,%22*F 6, (A.7%'82*F .-7(,2*;7(, 4%A'.0%2- 7(49%0?F 34%(09D%;7,%22* 7*'8-*=?7*,?0((7496*,?0(6, (A.7%'82?0(6%F;7, (>0(, 4.J'()2?0(S*40.0(*4A.2(J.T((S(J(%);-*A* , * ;3(7.2(> , 6%7;-*0 ;.69, 94*- .0(S(J(%);-*F -9'8794? , 4.0-.B @-*'82*F 34*A4.00?, . 7.-1% S(J(%);-*F .-7(,2*;78E , 4.J'()2?B S*40.B .-7(,2*A* *76?B. (4.J, '%)%2(F.

' I6/8 '/I 2*I#> - 0%B.2(J0 (2S*40.T(*22*A* *% ;3%)%2(> ;(;7%0? 934., '%2(> .6.37.T(%F *4A.2(J0. , ;4%6% %A* *%=(7.2(>.

b\$=/ - H7* 0%4. , J.(0*6%F;7, (> 7%' .) %*',%-. , T%'*0, *76%'82?B %A*) .;7%F - J,%28%, (' (649A(B=(*H%'0%27* , (- '%7*- , 7-.2%F , *4A.2*,) ; A4., (7.T(*22?0 (' (H%' -74*0. A2(72?0 3*'%0.

b 8\$@;=\$6;(@-(6/#\$8\$(:\$'(8\$&(2:-J- 4-8('L\$/=/ -6J/'\$#@/ &(-*(:/ - ;3%T('82* *4A.- 2(J*,.22?F 34*T%; ; 3%6.A*A(%);-*A* 934., '%2(> , , * ;2*;9 -*7*4*A* 3*'*1%2? 7%B2*'A((J.2>7(F S(J(%);-(0(934. 12%2(>0(4.J'()2*F =(*0%B.2(%);-*F 2.34., '%22*;7(; T%'8E 6*;7(1%2(> , ? , *- *A* J.6.22*A* 94*,2> S*40(4*,.2(> *34%6%'22?B 2., ?-*, (90%2(F, 4.J, (7(> 6, (A.7%'82?B , *J0*12*;7%F, *% ;3%)%2(> T%'%2.34., '%22*A* (-*274*(49%0*A* 34*7%- .2(> .6.37.T(*22?B 34*-

T% ; * , 0 * 4 S * ' * A () % ; - (B (S92 - T (* 2 . ' 82 ? B ; (; 7 % 0 . B , * ; , % 4 @ % 2 ; 7 , * , . 2 (> 6 , (A . 7 % ' 82 * F S92 - T ((J . 2 (0 . ED (B ; > .

b 86 ; : 8 ; 6 U ? * \$ J / 8 (=> ' U + ? (C 2 8 * \$ C , 6 (2 . 0 (- . 3 4 * > , ' % 2 (F - * 7 * 4 ? B , ; * 4 % , 2 * , . 7 % ' 82 * F 6 % > 7 % ' 82 * ; 7 (2 . (= * ' % %) . ; 7 * 0 * 6 ' (4 9 % 7 ; > , ; 3 * 4 7 (, 2 * F 7 4 % 2 (4 * , - % :

- *управления* ((2 S * 4 0 . T (* 2 2 * - 3 ; (B * ' * A () % ; - . > ; 7 4 9 - 7 9 4 .) - * = % ; 3 %) (, . % 7 ; > 7 . - * F S92 - T (* 2 . ' 82 * F . - 7 (, 2 * ; 7 8 E 2 % 4 , 2 * F ; (; 7 % 0 ? , , 4 % J 9 ' 8 7 . 7 % - * 7 * 4 * F 9) % ' * , % - . S * 4 0 (4 9 % 7 ; > 0 * 7 (, (T % ' 8 6 % F ; 7 , (> , 2 . * ; 2 * , . 2 ((3 % 4 % 4 . = * 7 - ((2 S * 4 0 . T (((J , 2 % @ 2 % F ; 4 % 6 ? ; 7 4 * (7 ; > * 3 % 4 . - 7 (, 2 ? F * = 4 . J , - * 2 T % 3 7 9 . ' 8 2 . > 0 * 6 % ' 8 6 % F ; 7 , (> , 3 4 (2 (0 . % 7 ; > 4 % @ % 2 (% , * ; 9 D % ; 7 , ' > % 7 ; > 3 4 * - , % 4 - . 4 % J 9 ' 8 7 . 7 * , (- * 4 4 % - T (> H ' % 0 % 2 7 * , 6 % F ; 7 , (> ;

- *исполнения* (. 2 7 4 * 3 * 0 * 7 * 4 2 . > , = (* 0 % B . 2 () % ; - . > , . 7 . - 1 % ; 7 4 9 - 7 9 4 . A 4 . , (7 . T (* 2 2 ? B , J . (0 * 6 % F ; 7 , (F) - , - ' E) . % 7 ; (; 7 % 0 ? A % 2 * 7 (3 () % ; - (B (S % 2 * 7 (3 () % ; - (B 2 . , ? - * , , . 7 . - 1 % , 4 * 1 6 % 2 - 2 ? B (3 4 (= 4 % 7 % 2 2 ? B , 3 4 * T % ; ; % % ; 7 % ; 7 , % 2 2 * A * = (* ' * A () % ; - * A * 4 . J , (7 (> , * = 9) % 2 (> (7 4 % 2 (- 4 * , - (, - * 0 3 ' % - ; * , 3 * , % 6 % 2) % ; - (B 6 , (A . 7 % ' 8 2 ? B 4 % . - T (F (6 , (A . 7 % ' 8 2 ? B 9 0 % 2 (F , ; * 6 % 4 1 . - D (B 7 . - (% H ' % 0 % 2 7 ? 3 4 * > , ' % 2 (> 6 , (A . 7 % ' 8 2 * F . - 7 (, 2 * ; 7 (, - . - 3 * J 2 ? % 4 % . - T ((, 3 4 * ; 7 4 . 2 - ; 7 , % 2 2 ? % 3 % 4 % 0 % D % 2 (> 7 % ' . * 3 4 % 6 % ' % 2 2 * F 0 . ; ; ? , A 4 . , (7 . T (* 2 2 * 0 3 * ' % , ' * - * 0 * T ((, 0 . 2 (- 3 9 ' > T (* 2 2 ? % (6 4 9 A (% 6 , (1 % 2 (> , * = % ; 3 %) (, . ED (% 4 % @ % 2 (% 6 , (A . 7 % ' 8 2 * F J . 6 .) ((6 * ; 7 (1 % - 2 (% T % ' (;

- *обслуживающие структуры* - * = % ; 3 %) (, . E 7 ; > , J . (0 * 6 % F ; 7 , (% 0 ; (; 7 % 0 , * = ; ' 9 1 (, . ED (B . 3 3 . 4 . 7 6 , (1 % 2 (F (; % 4 6 %) 2 * - ; * ; 9 6 (; 7 * F , 6 ? B . 7 % ' 8 2 * F , 3 (D % , . 4 (7 % ' 8 2 * F , H 2 6 * - 4 (2 2 * F , ? - 6 % ' (7 % ' 8 2 * F (6 4 .) .

d (= - 2 = - T (' \$ (- > , ' > % 7 ; > * 6 2 * F (J B . 4 . - 7 % 4 (; 7 (- S (J () % ; - * A * 4 . J , (7 (> , - * 7 * 4 . > 6 . % 7 * = U % - - 7 (, 2 * % 3 4 % 6 ; 7 . , ' % 2 (% * 3 4 * ; 7 4 . 2 ; 7 , % 2 2 * F * 4 A . 2 (J . T ((0 * 4 S * ' * A () % ; - (B ; * ; 7 . , ' > ED (B * 4 A . 2 (J 0 .) % ' * , % - . , 3 4 * 3 * 4 T (> B , - * 2 ; 7 (7 9 T (* 2 . ' 8 2 ? B * , * = % 2 2 * ; 7 > B 7 % ' . , * 2 * 7 . - 1 % (0 % % 7 , ? 4 . 1 % 2 2 ? % 3 * ' * - , ? % , * J 4 . : 7 2 ? % , H 7 2 * 2 . T (* 2 . ' 8 2 ? % ((2 6 (, 6 9 . ' 8 2 ? % * , * = % 2 2 * ; 7 (.

d \$: - , 2 % J . 3 2 % , * 7 4 ? , (; 7 * % , 3 * , 7 * 4 > ED % ; > 6 , (1 % 2 (% , , - * 7 * 4 * % , * , ' % - . E 7 ; > * 7 6 % ' 8 2 ? % A 4 9 3 - 3 ? 0 ? @ T .] 2 * 2 . 3 * 0 (2 . % 7 2 * 4 0 . ' 8 2 * % - * 4 6 (2 (4 * , . 2 2 * % 6 , (1 % 2 (% , . 4 8 (4 9 % 7 3 * (2 7 % 2 ; (, 2 * ; 7 ((* 7 ' () . % 7 ; > * 7 ; 9 7 ; 7 , (% 0 4 (7 0 () 2 * ; 7 (.] 2 0 * 1 % 7 , 4 % 0 % 2 2 * 3 * 6 . , ' > 7 8 ; > 9 ; (' (% 0 , * ' ((* 7 2 * ; (7 % ' 8 2 * ' % A - * (0 (7 (4 9 % 7 ; > . # % A * * ; 2 * , % ' % 1 (7 - 4 . 7 - * , 4 % 0 % 2 2 * % ; * - 4 . D % 2 (% 0 ? @ T ? , 2 % 3 * ; 4 % 6 ; 7 , % 2 2 * , ? J ? , . ED % F 6 . 2 2 * % 6 , (1 % 2 (% , ' (= * * 6 2 * , 4 % 0 % 2 2 . > . - 7 (, . T (> 0 ? @ T ? - A * 2 (; 7 . (. 2 7 . A * 2 (; 7 . 6 ' (7 % ' 8 2 * ; 7 8 E 5 0 - 5 0 0 0 ; .

N 8 - @ = (' \$ (- , 4 % 0 % 2 2 * % ; 2 (1 % 2 (% 6 , (A . 7 % ' 8 2 * F . - 7 (, 2 * ; 7 ((6 , (A . 7 % ' 8 2 ? B , * J 0 * 1 2 * ; 7 % F) % ' * , % - . , ? J , . 2 2 * % 7 . - (0 3 4 * > , ' % 2 (% 0 6 , (A . 7 % ' 8 2 * F S92 - T ((, - * 7 * 4 * % 3 4 % , ? @ . % 7 3 * 7 % 2 T (' % A * * 4 A . 2 (J 0 . , 6 . 2 2 ? F 3 % 4 (* 6 , 4 % 0 % 2 (.

\$ # \$ & (2 : - (6 / # \$ 8 \$ (- 7 % 4 0 (2 , (0 % ED (F 6 , . 7 * ' - * , . 2 (> :

- 3 4 * T % ; ; 4 . J , (7 (> , S * 4 0 (4 * , . 2 (> 6 , (A . 7 % ' 8 2 * F S92 - T (() % ' * , % - . , S (' * A % 2 % J % (' (* 2 7 * A % 2 % J % ;
- ; * ; 7 * > 2 (% 6 , (A . 7 % ' 8 2 * F S92 - T (() % ' * , % - . , - * 2 - 4 % 7 2 ? F 0 * 0 % 2 7 , 4 % 0 % 2 (, B . 4 . - 7 % 4 (J 9 % 0 * % S (J () % ; - (0 (3 . 4 . 0 % 7 4 . 0 (7 % ' * ; ' * 1 % 2 (> , 6 , (A . 7 % ' 8 2 * A * . 3 3 . 4 . 7 . , ; (; 7 % 0 , % A * * = ; ' 9 1 (- , . ED (B .

f ' (6 J \$ 1 - ; 3 * ; * = 2 * ; 7 8 7 % ' . ; * , % 4 @ . 7 8 4 . = * 7 9 (J . 3 . ; 4 . = * 7 * ; 3 * ; * = 2 * ; 7 (; (; 7 % 0 ?) .

f ' 8 6 - 4 \$ 1 - ; 7 % 3 % 2 8 9 3 * 4 > 6 *) % 2 2 * ; 7 (H ' % 0 % 2 7 * , ; (; 7 % 0 ? (- * ' () % ; 7 , % 2 2 . > 0 % 4 . 2 % * 3 4 % 6 % ' 2 - 2 * ; 7 () . V 4 (0 . - ; (0 . ' 8 2 * , * J 0 * 1 2 * 0 3 * 4 > 6 - % H ' % 0 % 2 7 * , , ; (; 7 % 0 % % H 2 % 4 A (> 0 . - ; (0 . ' 8 2 . , . H 2 7 4 * 3 (> 4 . , 2 . 2 9 ' E .

S \$ - @ (+ / ' \$ & (2 : / 1 : - 6 6 (: L \$ 1 K ; ' : L \$ - ' / => ' U + ' / 6 ; H (' \$ C ? * \$ J / 8 (=> ' - J - / 4 4 / 6 / 8 / - H 7 * 3 % 6 . A * A () % ; - (F 3 4 * T % ; ; , 2 . 3 4 . , ' % 2 2 ? F 2 . (J 0 % 2 2 (% 3 4 * ; 7 4 . 2 ; 7 , % 2 2 * F * 4 A . 2 (J . T ((7 % ' .) % ' * , % - . , 9 3 4 9 A * , > J - (B ; , * F ; 7 , ; - % ' 7 2 ? B 0 ? @ T , = (* 6 (2 . 0 (- (; 9 ; 7 . , 2 * - ; , > J .) 2 * A * . 3 3 . 4 . 7 . 2 . * ; 2 * , % J 2 . - 2 (F * , ' (> 2 ((A 4 . , (7 . T (* 2 2 ? B , J . (0 * 6 % F ; 7 , (F , S (J () % ; - (B 9 3 4 . 1 2 % 2 (F 4 . J ' () 2 * F = (* 0 % B . 2 () % ; - * F 2 . 3 4 . , ' % 2 2 * ; 7 (2 . A % * 0 % 7 4 (E 0 . ; ; , - (2 % 7 (- 9 7 % ' . , % A * = (* 0 % B . 2 () % ; - (% B . 4 . - 7 % 4 (; 7 (- , 4 % A (- ; 7 4 (4 9 % 0 ? % ; (; 3 * ' 8 J * , . 2 (% 0 7 % B 2 () % ; - (B ; 4 % 6 ; 7 , . , 7 * 0 . 7 (J (4 * , . 2 2 ? B 6 (. A 2 * ; 7 () % ; - (B - * 0 3 ' % - - ; * , . 7 . - 1 % 3 * H 7 . 3 2 * A * = (* 0 % B . 2 () % ; - * A * 0 * 2 (7 * 4 (2 A . ; (2 S * 4 0 . T (% F * 4 % J 9 ' 8 7 . 7 . B 3 % 6 . A * A () % ; - * F 6 % > 7 % ' 8 2 * ; 7 (.

V 6 / * \$ 8 - ' \$: / - ; (; 7 % 0 . ; 4 % 6 ; 7 , (0 % 7 * 6 * , H S S % - 7 (, 2 * A * (; 3 * ' 8 J * , . 2 (> H 2 % 4 A ((A 4 . , (7 . T (* 2 - 2 * A * 3 * ' > , (2 7 % 4 % ; . B * = % ; 3 %) % 2 (> 2 * 4 0 . ' 8 2 ? B 9 ; * , (F 1 (J 2 % 6 % > 7 % ' 8 2 * ; 7 (, ; * B 4 . 2 % 2 (> (3 * 6 6 % 4 1 . - 2 (> J 6 * 4 * , 8 >) % ' * , % - . , ; * , % 4 @ % 2 ; 7 , * , . 2 (> % A * 6 , (A . 7 % ' 8 2 * F S92 - T (((, J . (0 * 7 2 * @ % 2 (> * 4 A . 2 (J 0 . ; * - 4 9 1 . ED % F ; 4 % 6 * F .

V6*\$8/L\$- ' '/I 86('86-*/ - ;3%T(. '82* *4A.2(J*, .22?F 34*T%; ; 3%6.A*A()); - *A* 934., '%-2(>, *, *2*, 9 - *7*4*A* 3* *1%2? 0%7*6? (27%2; (, 2?B J.2>7(F ;3%T(. '82?0(S(J())%; -(0(934.1-2%2(>0(; T%'8E 6*;7(1%2(>, ?; *- *A* J.6.22*A* 94*, 2> S*40(4*, .2(> *34%6%'%22?B 2., ?-*, (90%2(F, 4.J, (7(> 6, (A.7%'82?B , *J0*12*;7%F (; *, %4@2;7., 6, (A.7%'82*F S92-T((J.2(0.ED(B-;>. YSS%-7(, 2*;78 %% 6*;7(A.%7;> 397%0 (;3*8J*, .2(> 0%7*6*, -4(7%4(. '82*A* 0*6%'(4*, .2(>7.- (B 9; '*, (F A4., (7.T(*22?B , J.(0*6%F;7, (F 6, (A.7%'82*F S92-T(()%'*, %-., ; 2%@2%F ;4%6*F, - *7*4?% B.4. -7%42?, 2.34(0%4, 6'> %A* =969D%F ;3*47(, 2*F ; *4%, 2*, .7%'82*F (' ('E=*F 649A*F 34*S%; ; (*2. '82*F 6, (A.7%'82*F 6%>7%'82*;7(.

Y*\$J/8(=>' /I 6(/I\$=\$8/L\$I - 34*T%; ; , *; ;7.2*, '%2(>, 4%0%22* 974.)%22?B ; , *F;7, 6, (A.-7%'82*F S92-T((;4%6;7., 0(S(J())%; - *A* , *;3(7.2(> ; T%'8E ; *B4.2%2(> J6*4*, 8> (*=%;3%)%2(>2*40. '82?B 9; '*, (F 1(J2%6%>7%'82*;7(*4A.2(J0.)%'*, %-..

M?-6-*>(2I(6(J/g h \$(\$ /:;;@;=\$6;g h \$(8(+ '-=-J\$\$ - H7* 34*T%; ; 7.- *F *4A.2(J.T((74%2(4*, -(2. *;2*, % (J=(4.7%'82*A* (;74*A* 2.34., '%22*A* 3*6B*6. - *7=*49 (;3*8J*, .2(E ;3%T(. '82?B 3%6.A*A()); -(B ;4%6;7., - *7*4.> 3*J, *'>7 2% 7*'8-* ; *B4.2>78, 2* (2.-.3'(.78 4%J9'87(49ED(F HSS%-7 3%6.A*A()); -(B , *J6%F;7, (F, . 7.-1% 9)(7?, .78 3%4;3%-7(, 2?% J.6.)(S(J())%; - *A* , *;3(7.2(> (;3*47(, 2*F 3*6A*7*, -(.

M?-6-*>(:-66\$J\$6;g h \$(8(+ '-=-J\$\$ - H7* 7.-> *4A.2(J.T(> 3%6.A*A()); - *A* 34*T%; ; , - *7*4.> *;2*, ? , .%7;> 2. , ?=*4% (4%.'(J.T((7.- (B (27%2; (, 2*;7%F, *=U%0*, (2.34., '%22*;7%F 3%6.A*A(-)%; -(B , *J6%F;7, (F, - *7*4?% >, '>E7;> .6%- , .72?0(7%-9D%09 ; *;7*>2(E -(2%7(- (7%' . (2.34., - '%2? 2. (;34., '%2((0%ED(B;> *7-'*2%2(F ; *;7*>2((J6*4*, 8>)%'*, %-..

M?-6-*>(K-6@\$6;g h \$(8(+ '-=-J\$\$ - H7* 7.- (;3*;*=? *4A.2(J.T((3%6.A*A()); - *A* 34*T%; ; , - *7*4?% 3*J, *'>E7 ; S*40(4*, .78 1(J2%22* , .12?% 6, (A.7%'82?% S92-T(((*9; '*, '%22?% (0(S(J())%; -((- .)%;7.,)%'*, %-., ;3%T(. '82?% 7%*4%7()); -((J2.2(>, 2.34., (78 (B 2. 3*, ?@%2(% 94*, 2> S(J())%; - *A* ; *;7*>2((*=%;3%)%2(2*40. '82?B 9; '*, (F 1(J2%6%>7%'82*;7(*4A.2(J0. J.2(0.ED(B;>.

[' 8('2\$*/I *4A.2(J.T(> 934., '%2(> 74%2(4*, *)2?0 34*T%; ; *0 c B.4. -7%4(J9%7;> , ?; *- *F HSS%-7(, 2*;78E, %% 4%J9'87.7? 6*;7(A.E7;> J. ;)%7 3*, ?@%2(> (9'9)@%2(>) - .)%;7, %22?B 3*- .J.-7%'%F, . 2% J. ;)%7 9, %' ()%2(> J.74.7 (3*74%=%'2(> J2.) (7%'82?B 4%;94; *, .

G\$'(\$8(6/4\$I - *62* (J 2.34., '%2(F 34(-.62*F -(2%J(*' *A(, , *;2*, % - *7*4*A* '%1(7 ;3%T(S()); -(F 0%7*6 2.34., '%22*A* 4%A9'(4*, .2(> A4., (7.T(*22?B , J.(0*6%F;7, (F *4A.2(J0.)%'*, %- . (;4%6?, T%'8E - *7*4*A* >, '>7;> 34*S(' .-7(- ('%')%2(J.=*'%, .2(F, . 7.-1% 4%.=(('-7.T(>, 4%0%22* 974.)%22?B ; , *F;7, 4.J' ()?B S92-T(F, ;4%6;7., 0(; '91.7.2%34*(J, *'82?% 6, (1%-2(> (3.; ; (, 2.> -(2%J(7%4.3(>) (6, (A.7%'82?% 6%F;7, (> (34*(J, *'82?% 6, (1%2(>), S(J())%; -(934.12%2(> (-7(, 2.> -(2%J(7%4.3(>).

G-66(:L\$I J6/*\$8/L\$- ' 'U+ #/\$@-?(C28*\$C 8(=/ &(-*(:/ - H7* ;3*;* = 34(,%6%2(> 0.; ; ? %A* 7%' . (0.; ; , *76%'82?B *72*; (7%'82* 3*6, (12?B %A* J, %28%, , , 7.-*% ; *72*%@2(, - *7*4*% *=%; -3%) (, . '*=? J.6.22% (B , J.(0*6%F;7, (; T%'8E HSS%-7(, 2*A* 4%@%2(> - *2-4%72?B 6, (A.7%'82?B J.6.).

G-66\$J\$6;g h /I J\$@'/28\$:/ - H7* ; (;7%0. (J=(4.7%'82* 2.34., '%22?B S(J())%; -(B 934.12%-2(F, 3*J, *'>ED(B - *44(A(4*, .78 S92-T(*2. '82?% (0*4S*' *A()); -((2.49@%2(> 6, (A.7%'82*A* .33.4.7., A%0%74((0. ; ; 7%' .)%'*, %-., , ?3*2>%0?B 34(;74*A*F 4%A' .0%27.T((A4., (7.T(*22?B , J.(0*6%F;7, (F *4A.2(J0., ; 9)%7*0 (26(, (69. '82?B =(*0%B.2()%; -(B *; *=%22*;7%F 0*7*4(- (J.2(0.ED(B;>, . 7.-1% ;3%T(S(- ((B .6.37.T(*22?B 3%4%;74*%-.

| (8-?\$/ *B, .7?, .%7 - *2-4%72?% 34(%0? (;3*;*=? , 'A*4(70? (' (34., (' . , ?3*'2%2(> *34%-6%'%22?B, 3*; '%6*, .7%'82?B ;3%T(. '82*-2.34., '%22?B 6%F;7, (F, 3*J, *'>ED(B 4%@(78 (; '%6*, .-7%'8; -9E J.6.)9.

| -?;=> - *72*; (7%'82* ; .0*;7*>7%'82?F H' %0%27 - . - *F-' (= *7%B2*' *A((, ; (;7%0?, 2%*=B*6(0?F 6' > 34(,%6%2(> , A.40*2()2% ; *7, %7;7, (% 4.J0%4*, (;9D2*;7(T%' *A* (%A*) ;7%F.

i 6\$'L\$4 - (;B*62*% 3* *1%2((34., (' *), *34%6%'>ED% (4%A' .0%27(49ED% 6%>7%'82*;78 3%6.A*A. (9)%2(- . , ; *7, %7;7, ((; T%'>0(S(J())%; - *A* , *;3(7.2(>, J. - *2*0%42*;7>0(4.J, (7(> *4A.2(J0.)%'*, %- . (9; '*, (>0(%A* , J.(0*6%F;7, (> ; *-491.ED%F ;4%6*F.

i 6-K\$:/: 8\$:/ ' /6;H(' \$C J(-@ (86\$ \$ @/22 8(=/ &(-*(:/ - H7* 7.-> 7%B2*' *A(> 3%6.A*A(-)%; - *A* 34*T%; ; , - *7*4.> *;2*, ? , .%7;> 2. 3*;74*%2((HSS%-7(, 2?B 34*A2*;7()); -(B =(*0%B.2(-)%; -(B 0*6%' %F 34*;74.2;7,%22*F *4A.2(J.T((7%' .)%'*, %- . *72*; (7%'82* ; *0.7()%; - *F ; (;7%0? - *46(2.7, 2.34., '%22.> 2. ; *, %4@2;7, * , .2(%A* 6, (A.7%'82*F S92-T((.

b\$28(@/ K\$#\$&(2:-J- *-24\$8/'\$1 4.;;0.74(,.;7;> -.- *62. (J ,.12%F@(B).;7%F ,;%F ;*T('82*F, *=D%;7,%22*F (A*;96.4;7,%22*F ;(;7%0? ,*;3(7.2(>, 3*J, '*>ED.> - .16*09) '%*,%-9 9-4*3 '>78 J6*4*, 8%, HSS%-7(, 2* 4.J, (, .78 (,*;,%4@%2;7,*, .78 6,(A.7%'82?%, *J0*12*;7(, *4A.2(-)%;-0 %6(2;7,% ,* ,;0(649A(0(90;7,%22?0(, 24.,;7,%22?0((H;7%7()%;-(0(-*03*2%27.0(;, *%F '()2*;7(.

b4-68 - *62. (J 2.(=*'%% .-7(, 2?B S*40 34*>, '%2(> S(J()%;-*F -9'8794? , 1(J2(*=D%;7,., B.4.-7%4(J9ED.>;>, 34%16% ,;%A* , ;*4%,2*,.7%'82*F 6%>7%'82*;78E, , -*7*4*F *34%6%'22?0 *=4.J*0 *T%2(, .E7;> (;*3*;7., '>E7;> 4%J9'87.7? 34*T%;;. S(J()%;-*A* ,*;3(7.2(> -.- *76%'82?B (26(, (6990*, , 7.- (T%'?B -*'%'7(, ,.

b4-68\$*'- (2-6(*'-*/'\$(- H7* *62. (J 2.(=*'%% HSS%-7(, 2?B S*40 J.2>7(F S(J()%;-(0(934.12%2(>0(, *7' ().ED.>;> (;-9;7,%22* *4A.2(J*, .22?0 (4%A'.0%27(4*, .22?0 *34%6%'22?0(34., ('.0(;*3%42()%;7, *0 S(J-9'87942(-*, (;3*47;0%2*, , 4.0-.B %6(2*A* (T%'*;72*A* 3%6.A*A()%;-*A* 34*T%;;. S(J()%;-*A* ,*;3(7.2(>, 2.34., '%22.> 2. .-7(, (J.T(E 0?; '7%'82*F (6,(A.7%'82*F 6%>7%'82*;7(; T%'8E ,;,%4@%2;7,*, .2(> (B 6,(A.7%'82*F S92-T(((9-4*3'%2(> J6*4*, 8>.

b-6(*'-*/8(=>/'1?(18(=>'-28> - H7* 6(2.0()%;- .> ;(;7%0. ;3%T(S()%;-(*4A.2(J*, .22?B , - .16*0 , (6% ;3*47. 6,(A.7%'82?B 6%F;7, (F, *4(%27(4*, .22?B 2. 4%@%2(7%B 6,(A.7%'82?B J.6.), -*7*4?% 34%63(;.2? (4%A'.0%27(4*, .2? 9; '* , (>0((34., ('.0(;*4%,2*, .2(F.

b4(L\$/= >'U(;46/ T ('\$1 34%6;7., '>E7 ;*=*F 7.-9E ;(;7%09 0*6%'6F 6,(A.7%'82?B 6%F;7, (F, -*7*4.> , 3*'2*F 0%4% ;*B4.2>7 A*0*0*4S2?% ((J*0*4S2?% *72*%2(> ;=(*0%B.2()%;-*F A4., (- 7.T(*22*F ;749-794*F ;*4%,2*,.7%'82?B 934.12%2(F. !*- .J.7%'8;7, *0 .6%- ,.72*;7(H7(B 0*6%'6F T%'>0 (J.6.).0 ;3%T('82*F 3*6A*7*, -(0*1%7 ;'91(78 7*'8-* ;7,%7;7, (% 0*6%'(49%0?B (0(6,(A.7%'82?B 6%F;7, (F *=U%-7(, 2* 9;7.2*, '%22?0 -4(7%4(>0 3*6*=(> ;7%0(((2?0(-*03*2%2-7.0(;*4%,2*,.7%'82*F 6%>7%'82*;7(.**

b4-68\$*'-UC 6(#;=>8/8 (4%J9'87.7 ;*4%,2*,.2(F) - H7* 7.-% 34*>, '%2(% 6,(A.7%'82*F S92-- T((;3*47;0%2*, , 9; '* , (>B (26(, (69.'82*A* ((-*'%'7(, 2*A* ;*3%42()%;7,., 4%A'.0%27(4*, .2-2*A*, (J0%4>0*A* (*T%2(, .%0*A* , ;7,%7;7, ((; 34., ('.0(;*4%,2*, .2(F, -*7*4*% *7' ().%7;> ;3%T(S()%;-(0(6'> - .16*A* , (6. ;3*47. =(*0%B.2()%;-(0(B.4.-7%4(;7(-.0(6,(A.7%'82?B 6%F-7, (F (*;*=*22*;7>0(;3*;*=* , 4%@%2(> 6,(A.7%'82?B J.6.).**

b 86; : 8;6/ 2-6(*'-*/8(=>'-C?(18(=>'-28\$ - H7* J.-*2 (27%A4.T((H'0%27*, ;*4%,2*,.7%'8-2*F 6%>7%'82*;7(, -*7*4?% 0*A97=?78 34%6;7., '%2? , , (6% ;(;7%0? 02*A*94*, 2%, ?B 0*2*T%' , ?B 0*6%'6F, *=U%-7(, 2* *74.1.ED(B (%4.4B()%;-(% ;;>J(3;(B*'A()%;-(B, =(*0%B.2()%;-(B, S92-- T(*2.'82*-0*4S*'A()%;-(B (649A(B -*03*2%27*, 0*7*4(-, (*=%;3%)(, .ED(B 9;3%2*% 4%@%2()%;*2*, 2?B 6,(A.7%'82?B J.6.).

d(+ '-=-J\$1 - H7* ;(;7%0. =(*'A()%;-(B, 0%6(T(2;-(B, 7%B2()%;-(B, 3%6.A*A()%;-(B (649A(B ;3*;*=* , (;4%6;7, (J0%2%2(> ;*7*>2(> 6,(A.7%'82*F S92-T(((; ;*F;7, *4A.2(J0.) '%*, %- . , 34*T%;;% J.2>7(F S(J()%;-(0(934.12%2(>0(, *;2*, .22.> 2. J2.2(>B * 0%7*6.B (34(%0.B *;9D%-;7, '%2(> -*44%-T(*22*-34*S('.-7()%;-(B, -(2%J(7%4.3%, 7()%;-(B, ,*;3(7.7%'82*-*=4.J*, .7%'82?B (4%-4%.T(*22?B 0%4*34(>7(F.

d6('/ T(6U - H7* 9;74*F;7., (' (34(;3*;*=%'2(>, 34(3*0*D(-*7*4?B 0*6%'(49E7;> , 34*T%;;% 74%2(4*, -(7% (' (2?% 9; '* , (> =969D%F 4%'82*F 6%>7%'82*;7(*=9).%0?B (2.34(0%4 ;*4%,2*,.7%'82?% 9; '* , (> , ?3*'2%2(> ;3*47(, 2?B 934.12%2(F).]2(3*J, '*>E7 2.34., '%22* 34%*=4.J*, ?, .78 H2%4A(E , 2%2%F ;4%6? 7.- (0 *=4.J*0,)7*=? *2. 34(*=4%7.' . 2%*=B*6(09E 6'> 97(' (J.T((*4A.2(J0*0 3*'J29E S*409. [4%2.1%4? -'. ;;(S(T(49E7;> по назначению (9;74*F;7,., 34(0%2>0?% ; T%'8E 4.J, (7(> *34%6%'22?B 6,(A.7%'82?B ;3*;*=2*;7%F, 7%B2()%;-(% ;4%6;7,., (;3*'8J9%0?% ; T%'8E 4.J, (7(> 6,(A.7%'82?B -.)%;7, (;(*', ?B , *J0*12*;7%F *76%'82?B 0?@%2?B A4933); 9;74*F;7,., 34%62.J2.)%22?% 6'> 934., '%2(> 34*T%;;*0 S*40(4*, .2(> ;3%T('82?B 6,(A.7%'82?B 2., ?-*); по направленности (2. *; , *%2(% A%*0%74((6, (1%2(F, =(*- (2%0.7()%;-*F (' (= *6(2.0()%;-*F ;749-794? 6, (1%2(F); по области моделирования, ; (;3*'8J*, .2(%0 0%B.2(-)%;-(B S.-7*4*, (4.J' ()2?B 9; '* , (F A4., (7.T(*22?B , J.(0*6%F;7, (F 7%' .) '%*, %- .), (2S*40.- T(*22?B S.-7*4*, ('A()%;-(B ;B%0); по характеру информационного обмена (; 69='(4*, .2(%0 *=4.72*F ; ,>J(, =%J 69='(4*, .2(> *=4.72*F ; ,>J(; (;3*'8J*, .2(%0 J,9-* , ?B , ;'9B*, ?B (649A(B -.2.'*, ; ,>J().

\$#\$&(2:/1 ;=>8;6/ -) ;78 *=D%) '%*, (%)%;-*F -9'8794? , .12%F@(0(T%22*;7>0(-*7*4*F >, '>E7;> J6*4*, 8%, S(J()%;-*% (69B*, 2*% ;*, %4@%2;7, *' ()2*;7(.

\$#\$&(2:- (*-24\$8/'\$(- ;3%T('82* *4A.2(J*, .22?F .-7(, 2?F 3*J2., .7%'82?F 34*T%;;, B.4.-7%4(J9ED(F;> 6,9;7*4*22*F , J.(0*; ,>J.22*F 6%>7%'82*;78E 3%6.A*A. (J.2(0.ED%A*;> 3* 3%4%6.)% (9; , *%2(E -*03%'-. ;. J2.2(F, 6,(A.7%'82?B 2., ?-* , (90%2(F, 2.34., '%22?F 2.

9-4%3'%2(%J6*4*,8>)%',%-. , 3*6A*7*, -9%A* - 74969, 34*S%; ;(*2.'82*F 6%>7%'82*;7(, 2%4.J4? , - 2*F %%; ,>J(; 24. . ;7,%22?0(, 0*4.'82*-H7()%; -(0((;*T(. '82*-3.74(*7()%; -(0(9;74%0'%2(>0(*D%;7, . (A*;96.4;7, . .

f:28('2\$*'/I *4A.2(J.T(> 934. , '%2(> 74%2(4* , *)2?0 34*T%; ;*0 ; ,>J.22. ; 9, %' ()%2(%0 %A* - *' ()%;7,%22?B (J.74.72?B, 4%;94;2?B), 2.34(0%4 , 4%0%22?B, H2%4A%7()%; -(B, 0.7%4(. '82?B, . 2% - .)%;7,%22?B (HSS%-7(, 2?B) 3*- .J.7%'%F (4%J9'87.7* , .

. #* 02*A(B ;74.2.B 0(4. , , -'E).> (-4.(29, 9)%2(% * 6, (1%2((7%' .)%*',%-. , 2.;7*>D%% , 4%0> 4.J, (, .%7;> 3.4.'%'82* ; =(*0%B.2(-*F. 1 2*A(% ; * , 4%0%22?% ; 3%T(. '(;7? 34* , *6>7 ; , * ((; ; '%6* , .2(> 2. ;7?-% .2.7*0(((=(*0%B.2(- (, ;74*A* 2% 4.J6%'>> H7(6, % 2.9-(.

]T%2(, .> 3%4;3%-7(, ? 4.J, (7(> -(2%7(- (, -4.(2% , ; '%69%7 *70%7(78 , ?4.1%22?% 7%26%2T((- 4. ; @ (4%2(E A%A*4.S((4. ; 34* ; 74.2%2(> T%274* , ; 3%T(. '82?B (; ; '%6* , .2(F , H7*F *=' ; 7(, ,) . ; 72* ; 7(, 09T-% , R%42(A* , % , !2%34*3%74* , ; -% (649A(B A*4*6.B ; 74.2? .

D\$8(6/8;6/

1. ".@9=. #. K. g(*0%B.2(-. * ; .2-(/ ".@9=. #. K. - " (% , : M.9). 0(4, 2002. - 278 ; .
2. O.397(2 K. M. G4. , (7.T(*22.> 74%2(4* , - . / O.397(2 K. M. - " (% , : d2.22>, 1999. - 315 ; .
3. O.397(2 K. M. h*40(4* , .2(%0. ; ; ? (6(2.0(-. A4. , (7.T(*22?B , J. (0*6%F;7, (F7%' .)%*',%-. , *27*- A%2%J% / K. M. O.397(2, #. K. " .@9=.. - " (% , : d2.22>, 1999. - 202 ; .

A' '- 8/L\$\$

В статье представлен ретроспективный анализ формирования кинетики тела человека как системы знаний о двигательной функции тела человека. Авторы предлагают понятийный аппарат, который характеризует двигательную функцию человека.

G=g&(*U(2=-*/: кинетика тела человека, двигательная функция.

A' / 8 - =!C D / 4 ; 8 ! ' . E ! 8 / = ! C G / H ; I / . G ! ' (8 \$: / 8 ! = / = g ? \$ ' \$. У статті представлено ретроспективний аналіз формування кінетики тіла людини як системи знань про рухову функцію тіла людини. Автори пропонують понятійний апарат, який характеризує рухову функцію людини.

G=g&-*! 2=-*/: кінетика тіла людини, рухова функція.

Anatoliy Laputin, Vitaliy K/shub/. Kinetics of Body of Man. This article presents the retrospective analysis of human body kinetics development as the system of knowledge about the human body motor function. Authors propose the conceptual apparatus which characterizes the human motor function.

Key words: human body kinetics, motor function.