

½ÌÓý²¿°ì¹«Ìü¹ØÓÚÓ¿·ç¿¶½ÌÓý²¿²úÑ§°Ï×÷
Đ-Í¬ÓýÈËÏÂ¿¹ÜÀí°ì·¿·µÄÍ"Öª

:-7 =8 "ñ p =-*Eì 8 •6è » ´ • µ æ+¼+U Ý 0Aô « •6è
v , ? ©G L ´ ‹ f µ •6è . ´ v µG " :Q 1•œ W =G -7 >
0 :Q 1•œ W Æ

pCe ±:s Ô E 3 xL~ Ô ç » © Ä\$' L Ý •=Ã >,°9 " E?÷ F
´ 3 Ô O 2017 P95 - µ Â E © Ä Ö ! 0Aô ‹ æ 0 Ô ó %
CÀ 0A > •6è / ±Ax H 2.0 95

- >0 ...7 yV` p

½ÌÓý²¿²úÑ§°İx÷Đ-Í-ÓýÈËîÄ¿¹ÜÀí°ì."

pCe ±:s Ô E 3 xL~ Ô ϕ » © Ä\$' L Ý •=Ã >,°9
" E?÷ F 3 Ô O 2017P95 - μ Â E © Ä Ö ! 0Aô ‹ æ 0
Ô ó %oCÀ 0A > •6è / ±Ax H 2.0,° E?÷ F •Q O 2018P3 - μ
2ô" , Ö p Â?ú99 •6èG Ý œ > ' ... B6è ðN⁻-\$' A1¶0& Ý œ
> ' ... B6è ðN⁻-\$ μ1x* < , (I Đ b Ô# >

Ý œ > ' ... B 6è ðN⁻-\$ ^FPEý u Ò c & = 7 P e
7 =Q W / Û = § 0 § á , \$' L Ý •=Ã > , ùF •6èK4 = ð fK4
D Ý PK4 =Q æK4 ? p>Š Û , Ý P Â ¶ e ‹,° 6 æM6"x Þ Þ
Q W ð f / ± oMÿ >

Ý œ > ' ... B6è ðN⁻-\$ • 7 q Þ C x 3 ì5 #, /t P
‹M6"x , C x N+›] æª Ý P ‹M6"x , C x æ 0 =æ q0 =
æ Ò0 =æ ½0 0AôM6"x , C x 7 P 0.v] = N+›].J0- M6"x ,
Uİ ç-. © 7 P C -* Û | P _- ' p-\$ = , \$' L DQ W Ý œ >
' , ùF / ±-\$ = => CzLU C =Cz\$ÆGf5α =1x* < C x,° P İ ... B ,
/ ± e Ç KN¼5 #, /t P ‹M6?-,°Q 3VC^ IL ð f >

Ý œ > ' ... B6è ðN⁻-\$ Ô>,N⁻-\$ I1x* < , q?· ; "
£2± Æ

´ 6 μ æ 0 =æ q0 =æ Ò0 =æ ½0 0AôN⁻-\$ > 7 P
Ñ5 Co ÂCz\$Æ , e 7Q W 6 ‹ æ 0 =æ q0 =æ Ò0 =æ ½0

.J0- D ÔD+ , Þ Þ W 7 > ' Ô œ => '6è ð => ' g P => '

⟨ , \$' ⟩ 6 ⟨ P m L Ø3X ÔD+ , ~ F % Þ μ, ° 0Aô oMÿ F Ò >

´ Â μ• œ » ï ÂB40A %o31 oMÿN- \$ >7 P Ñ5 Co => Cz =
¶ e = © & 1• , < Ý P Â ¶ e 6 æF ⟨ =>, P / ð f / ±, ° 6 æ
?."x K › • œEý0A , Þ ÞQ W * æ • œ » ï = Â °B40A %o31 , 0
AôF8 Ê>, P ⟨ M6?· = % § á, °B40A = • † = • œ ~ Á1• Cz\$Æ -
Þ μ Ê+^ >

´ ? μ > Cz / AãN- \$ > 7 P Ñ5 Co ÂCz\$Æ , +gQ W Â 7 P
§ B4ú4ý 6 ⟨ M~ G • >, ° ¶ e / Aã ß PÂ < á ÆN- \$.J0-1• ' ,
} • > • œ"j © Â ÔD+73 Ñ >

´ μ ÔD+ — , Â ÔD+ 0 f 0AôN- \$ >7 P ÑCzH =E¥.ç
, Aô = L © & , e 7Q W 0Aô ÔPÂ Ú = ÔD+ 0 f = ÔD+ • œCz\$Æ
1• , UI ç 7 P Û | œ+U Ô – ÔAã , Q ÔD+ • œC^H >

´ Ê μQ æ Q P •6è oMÿN- \$ >7 P Ñ > Cz =E¥.ç , — , =
ËCz 0H 1• , e 7Q W Ö p Q æ Q P •6èB40A %o31 = ÔD+Aã4ù %o
31 = Q Ø0°L* =N- \$ « LEç L © & 1• 0Aô , \$' L Q æ Q P •6è o
Mÿ >

´ £ μQ æ Q P6Š > 0H N- \$ >7 P ÑCzH == 2 • > Â
N- \$.J0- ï G , e 7Q W œ+UF >, Q æ Q P ÔD+ >

•6èG e Ý œ > ' ... B6è ðN- \$, ° Á?ø1x* <G L ,

q?-6,CY e Æ

´ 6 µ I Ð ? © u10E ÂN⁻-\$1x* < Ô# ,5L I < ?ú H Âª Ü

'H & i ,5 1⁻ ÞF Â = 2N⁻-\$?ú99F >, Ç

´ Â µ4ú 0 ⁻ = 2 I ì4ú4ý 6 <.J0⁻ = ÞB == 2 =Aú f =

F Ò Ú#w1• ' Ç

´ ? µ = 2 6 < = • .Lü ðN⁻-\$FªF? ðEý0A- 1x ð5 NÍPÂ I =

F Ò </p1• ' >

-74Ý •6è>, uG L ,º q?-6,CY e Æ

´ 6 µ I Ð b p \$' L Ý •=Ã > ðF Ý œ > ',º u10E à ó Ç

´ Â µ = 2 b p Q W0% . ø Ö Ý œ > ' ... B6è ðN⁻-\$,•

³Eý0A- 1x = N/öN⁻-\$ ÞF?1• ' Ç

´ ? µ = 2 b p -. © I ì4ú4ý 6 <.J0⁻ = ÞB == 2 =Aú

f = F Ò Ú#w1• ' >

ø D Ý œ > ' ... B6è ð N⁻-\$,º Q W eN⁻-\$F >,1x* <

,º q %o , q?-6,CY e Æ

´ 6 µ 01 › žQ W Ý œ > ' ... B6è ðN⁻-\$4ú4ý1x* < %o31 ,

I Ð ' Ô ó4ü O Ç

´ Â µ pN⁻-\$ Ô ó Ñ)ã¹ — , e 7 Gf =N⁻-\$1x* < ð Ž Ç

´ ? µ CUCYQ W Ý œ > ' ... B6è ðN⁻-\$,º AðA÷ ðFªF? = c U

ö ð5 NÍPÂ I = N/öN⁻-\$ ÞF?1•F >,1x* < ' Ç

´ µ CUCYQ W Ý œ > ' ... B6è ðN⁻-\$,º n- -™1x* < Âª

Ü q5 ' ,FªF? Þ9† N/öN⁻-\$ >

ø D Ý œ > ' ... B6è ðN⁻-\$,º 7 P,º q?-6,CY e Æ

´ 6 µ 9N⁻-\$ = •, Ũ Q WN⁻-\$ > 'tiB- , 6 < = •@
B1 =Q W > '#sB> =N⁻-\$ ÞB => ' E G / Ũ1• ' Ç
´ Â µ?ú99N⁻-\$F >, , [rEý0A1x*< ,.æ µB0,°N⁻-\$ e 7
5 Co =E¥.ç ,1•Cz\$Æ ,CéNÓ f f , LÒN⁻-\$N° _ Ô ó Ç
´ ? µ4ú4ýN⁻-\$5 NÎPÂ I , ŨF7N⁻-\$ª Ü Ô ó û ë Ũ € >

o æ 3 ì5 #, /t P <M6"x.æ Ðª Ü ·LüH &iN¼
Â !W ,M̃ G 7 P ·Lü Ý œ > ' ... B6è ðN⁻-\$ = • >
e 7UI ç1\ > A M?·"x,° 7 P Ú Ý œ > ' ... B6è
ðN⁻-\$ = • >

´ 6 µ - ?)"1 # ðCz r , F1 8) G 2ª , ^ v ">, P N¼
- ?E¹ pN¼ ~,° ¶ e ÑH Â.J Ô Ñ , P x0i Ð = P5 8¥³ ,
Â Ô5jCzH Õ O @ ^ 500 = y @ Ç

´ Â µø D 7 P Ê - ? › ž,°CX x I Ü , +^8¥³ , !p-È =
ApPÍ1• C8¥Aæ < , -73 Ñ 3 ì-. ©6,73G L L pº 0 -,° 7 P
+^8¥³ Ũ € , J `)æ ? b Ô# 1b ? w 6 — v M/!~]>, p >
^- . ©N¼ - ? DQ W 6 < > ',°8¥³ 0.v , ? 2 C´ a µ @
> 'Q WQ 4Ý6,0& I ì 0 -,° Þ9† † İ Ç

´ ? µUI ç 7 P" !W Ñ,° ÔL{ e 7CzH qNÓ C G Ä 50
= y ´ C ; aE¥.ç ,1• È › µ Ð ÔL{ e 7CzH ' p Ý œ > ' ... B
6è ðN⁻-\$ IN⁻5 Co , CLz \Lz Ö — , Ç

´ µ 7 P = Ð I ðCUCY Ý œ > ' ... B6è ðN⁻-\$-. © Á Ò >
1\ > ø D?."x J ? W 7 > ' E G,º 7 P o æ-. ©
?ú Ð , ??."x5L I ÚN⁻-\$ = • > = • Ê ; " e 7N⁻-\$2± Á ?ú
W =+iB- — , = 0Aô-\$ = = e 7 t à =Nº U F Ò ? ©?."x1• »
ï > = • Ê ^1\ ># Á# ?ú?ú Ð,º 0.v @ , D Ý P ‹M6"x = 7
P ð fM6"x =Q W ð f / ±?."x-.5 > ,Nº U F Ò Ê - ? Q æ]
Â %69 n] >

U I ç 7 P / Ý œ > ' ... B6è ðN⁻-\$ ^1\ ># Á#
?ú?ú Ð 0.v • @F >,Cz ß ,Cz ß Ê% Cé A 0 b — , Æ

´ 6 µ æ 0 = æ q0 = æ Ò0 = æ ½0 0AôN⁻-\$, • œ »
ï ÂB40A %º31 oMÿN⁻-\$,Q æ Q P •6è oMÿN⁻-\$1• ÔL{ e 7CzH
C G Ä 5 = y /N⁻ Ç

´ Â µ >Cz /AãN⁻-\$ =Q æ Q P6Š > 0H N⁻-\$1• ÔL{ e 7Cz
H C G Ä 2 = y /N⁻ Ç

´ ? µÔD+ — , Â ÔD+ 0 f 0AôN⁻-\$E¥.ç , e 7 - r qNÓ C
G Ä 20 = y /N⁻ Ç

´ µ+iB- — , Ê ç 6 =FE D ,M̃ G ž %º1\ > — ,ºQ W Ç
C Í = Ð > 'Q W ,C Í p I?."xQ W 01 6Š > ÔPÂ Ú = ÑE¥
.ç , CzH Gf • = 8(,1• Ç

´ Ê µN⁻-\$ Ô ó UL† 68b p 1—2 º ,(!À û ë N⁻-\$ > B
4Ü Ð p ü >

4ú4ý I ì / 7 P † İ ÂN⁻-\$ = •F >, = 2 , 0
= 2 E?÷ >

5 = ~ x , 1\ > ? . " x , ° N - \$ = • M ~ G / t P ç 6

9 >

Q W o ¢ N - \$ = • , 4ú4ý > + U 8 q F > , N - \$ + i B - ,
• 3 + i B - N - \$, ° F a F ? ' >

7 P o ¢ N - \$ = • 4 Ü Ð , ? • ç © ç ! T M , ° Õ O 8
q 4 ú 4 ý l ì 6 ‹ N - \$ A ð A ÷ ' , ¬ < W 7 ï E ô F > ' E G , ° N -
- \$ G / t P ç / p >

7 P " ¬ ! W 1 N - ! H C Ê G Ä 2 N - Ç Q W Ú !
H C » E ý = • 9 N - \$! H , 1 N - N - \$! H C Ê „ Ä = • 9 N -
- \$! H , ° 50 % Ç Q W Ú ! H ` E ô f = • 9 N - \$! H , 1 N -
N - \$! H C Ê „ Ä Ú ! H , ° 50 % >

5 ç / p 8 A ä , ° N - \$, W 7 ï 1 ' 5 " > ' ... A ä ,
... A ä N ± D . ¢ N - \$ » ï = C z ß ~ E , L * = N ° U F Ò = N - \$ ž U Â
P Â l = ü 1 • Á N - > Q W C U C Y < 1 ' A Ø D , ° ... A ä F > , Ú =>
4ú4ý l ì / 7 P Ú , ° N - \$ 1 N - 5 Ò F > , n Ð ,
6 4 p 5 Ò 5 x = ~ D G / t P ç 9 >

1 N - 5 Ò 9 D , W 7 ï Ê 0 % • e Þ N - \$. J 0 ¬ ,
? • > ' ... A ä 4 Ü Ð . ¢ : s Ô 5 C o ! t E ¥ . ç , e 7 1 • Á N - >

N-\$CUCY đ Ê4ú4ý ³N-\$ Ô ó , •³N-\$ Ô ó
û ëAæ < , , GQ W q1xG L Â 7 P-. ©CUCY đ Û €N-\$ •>,
c 0)æ,°H]ÁN , ??."x ÑN-\$F < û ë Û € >N-\$ Ô óÉý
0A c ,N-\$CUCY đ 68b C Í * ~ >.ª N-\$CUCY đB9/ñ L C735
5# ›>, > ' ...Aä1• û ë ,g W 7 ï ... | * ~ đF? ,... | C 68*
, %4p!~B N-\$, ¬ <N-\$ * û ë @ Û = ~ >

W 7 ï Ê 7 ü ="ÕFP6Š31 ,:s ÔN-\$ = •
> ' ...Aä µB0 , A÷N-\$N° _ Ô ó , Û -Gf > ? © ïM~ /N-
-\$,°F >,- 1x >

N-\$CUCY đ ^ > ' ...Aä4Ü Đ ,L* » Â F žG 1
x ,5 Q W B E , G 7 P 0N-\$5 Nî+iB- , ¬ ? > ' ...Aä Û
-. ©A÷ D † Ì >

7 P4ú4ý I ïF >,N-\$PÂ I , ??."x Û €PÂ I
5 Ađ > 7 P /N-\$,°PÂ I5 Ađ < p "FPEý" CFPEý" Z2± >

´ 6 µ? U Â F > ' ...Aä4Ü Đ,° :N- 1 x , Ñ,°PÂ ICz Ì
U† ž = ! ¢-U Ô ,PÂ I5 Ađ p" FPEý Ç

´ Â µN-\$ Ž ^ A M û ë • 66; ,PÂ I5 Ađ p" CFPEý Æ

1. ` ? > ' ...Aä4Ü Đ Â FN° Đ,°-\$ = = 1 x L/÷8 * oN-\$
.J0¬-\$ = = 1 x Ç

2. Ñ,°PÂ I ½ , =Cz Ì = ! ¢ C-U Ô Ç

3. Ô óEý0A c 0)æH]L\$NÎ , L Ž ^ P ` @ é,°4Ö4í Ç

4. Ô óEý0A c Ž ^F # F ?ú>, p >

Q W %^{a+iB-5} NÎ,°N⁻-\$ c , N G-74Ý •
6è>, uG L Þ9† N/öN⁻-\$ Ç74Ý •6è>, uG L 4ú4ý-. © I ì ^ b
p Q W Þ9†,° N/öN⁻-\$ c NF >, Þ9† ×Q W Þ9†,° N/öN⁻-\$
!H Õ O @ CC»Eý b W %^a (FPEý5 NÎPÂ IN⁻-\$!H ,° 10%>
4ú4ý I ì / 7 P Ú,°PÂ I5 Ađ Â-74Ý •6è>,
uG L Þ9†,° N/öN⁻-\$F >,Aú f Â"} q , 9 b^a ÜPÂ I û ë >

N⁻-\$ F Ò,°. Aü Ý y+g 7 P =Q W ÂN⁻-\$ μ û
đ Ž Ó > ' ...Aä.æ Đ >

01 Ý œ > ' ... B6è đN⁻-\$ F Ò É , <PÂ IFP
Eý,°N⁻-\$ F ÒLü c G/t P ç 6 , / N/öN⁻-\$ F Ò F8 %^ö ĩ E </p
Þ μ >

{ < [N⁻-\$ F Ò,°5 #,, ~- Â/t P ~- , e
7N⁻-\$ F Ò GB40A = • † =B4 , = ~ ÁEç L , G@ é ĩ ~ é10E
ÞB ĩ ~Eç L , G ç § C x © & Ý ÷Eç L >

0% · e 7 1b ? ĩ p ° 6 <N⁻-\$ Aú - , > ž5 AxÁú
- %^ö31 > p L- #•Aú -5 ÒF +^ , ' pB & ĩ 6 < = %ö ç4Ü •,°H

? . Ó α >

ø D 7 P ÊF 6!>?ú99 =4Ü •8 Dá>, p , • é

'5 A M2± r û ë +U >

´ 6 μ ^N^- \$ = • =N^- \$5 NÎ1• † Ĩ c 0)æ C ÔL~F& , `FV

7 P +^A÷ D = I ì Þ9† † Ĩ1• Ç

´ Â μ ` ? ...Aä4Ü Ð:s ÔCzH E¥.ç ,Cz\$Æ , ^ > ' ...Aä4Ü

Ð • L , p I? ."xQ W ÑE¥.ç , CzH Gf • , N^- \$ Ô ó » ĩ D

...Aä4Ü Ð C 68*1•F 7 N^- \$ = • > ' ...Aä4Ü Ð,°>, p Ç

´ ? μ Aú xCo =pB Co =òH 1• ~ E? ."xQ W Ú4é-. ©Co

+^ , 7 P Õ FV F"ÕFP C+{ =N^- \$ •>, &Lô1•>, p Ç

´ μ U •6èG =Ý œ > ' ... B6è ðN^- \$ C •F >, Ý ÷ L C

x c d =| P Þ μ Û V , û8 ! \ ? •6èG -. ©4ú4ý p ° C

0&,°1 N^- A÷ œ =5 NÎA÷ œ =(, t1• C %>, p Ç

´ Ê μ ¬ C ?N^- \$1x* < Ô# •>, F # F ?ú,°>, p >

ø DQ W Ê0% .4ú4ý-. ©G L 6 ‹N^- \$- 1x

' , • é '5 A M2± r û ë +U >

´ 6 μ N^- \$4ú4ý1x* < %31 C › ž =1x* < I Ü5p g =— , e 7

LÒ C f f Ç

´ Â μ Q W8 Dá Õ 0)æC» U ` Â F L4p!~N^- \$Eô f %

a1 N^- q i,° 30%L @ Ç

´ ? μ Q W-. ©G L ` s fCX x =3 ?Cz Ý =à ö- 1•-

1x6,CY ,8* μ N^- \$F >, c 0)æF # F ?ú>, p Ç

´ μ ¬ F 7 Ý •=Ã >2ô/" F # F ?ú>, p >

N-\$CUCY ð Ê0% · 6 ‹N-\$J0¬ ’ , · é ’

5 A M2± r û ë +U >

´ 6 µ Ñ<• } † İ , /N-\$F >, c 0)æ,°L\$NÎBD Û-È Û ,

/N-\$ F ÒF >,<• } Û V1•>, p Ç

´ Â µ N-\$ C •F >,:[_ =• • œ 0 .JCz\$Æ = yBA

/÷ 1•>, p Ç

´ ? µ ` ð Õ 28*N-\$C» U ` Â F L4p!~ ,N-\$ F Ò D

Nº U ?E¹] \$D Ç

´ µ÷8 2 oN-\$ C0& ,J0¬ » İ D ¯ ü,°N-\$AôAx [H

C1\ =.J0¬Eý0A c ³0¹ ð F Ò1•>, p Ç

´ Ê µ Ž ^ ¬ F # F ?ú>, p >

“ Ý œ > ’ ... B6è ðN-\$,”09’ ½ C0& p Æ

University-Industry Collaborative Education Program

b Ô# 8 ! • C- ó>, †g •6èG CUCY@ H >

® Ñ V N d —

æ • ÿ " ! ‘ æ • ý W d ¯

ý B æ W d ¯

2020- 1 e 14 æ ÿ

