BIOE 476: Tissue Engineering, Fall 2017

Quiz #9

1. **(1 point)** Square-shaped multicellular islands have been shown to exhibit relatively enhanced proliferation at the corners. What mechanism was shown to cause this localized proliferation? (Circle ONE best answer)

   A. Improved access to growth factors  
   B. Localized differences in surface chemistry  
   C. Directional migration off of the island  
   D. Increased intercellular tension forces  
   E. Random variation- no consistent mechanism

Answer: D

2. **(1 point)** Cell-cell contacts are used by endothelial cells to sense mechanical stretching signals. (True or False)

   A. True  
   B. False

Answer: A (True)
3. (1 point) The bowtie-shaped microwells allowed investigators to decouple the effects of what two microenvironmental signals? (Circle ONE best answer)

A. (i) Cell shape and (ii) Cell-Cell contact
B. (i) Cell-cell contact and (ii) Oxygen tension
C. (i) Cell shape and (ii) Substrate Stiffness
D. (i) Cell-Cell contact and (ii) Substrate Stiffness
E. (i) Substrate stiffness and (ii) Oxygen tension
F. (i) Cell shape and (ii) Oxygen tension

Answer: A