1) If hMSCs are seeded on top of collagen coated PA gels having various stiffness and a graph of spread are vs. stiffness was plotted then what will be the equation of the graph?

- $y=mx+c$
- $y=x^2$
- $y=(Kx^n)/(C+x^n)$
- $y=1/(1+e^{-x})$

No, the answer is incorrect. Score: 0

Accepted Answers: $y=(Kx^n)/(C+x^n)$

2) If hMSCs are seeded on top of collagen coated PA gels having a stiffness of 1kPa, 10kPa, and 30kPa, then what markers will we observe during long term culture?

- 1kPa: muscle specific markers, 10kPa: neurogenic markers, 30kPa: bone-specific markers
- 1kPa: neurogenic markers, 10kPa: muscle specific markers, 30kPa: bone-specific markers
- 1kPa: muscle specific markers, 10kPa: muscle specific markers, 30kPa: bone-specific markers
- Markers are independent of the stiffness of the substrate

No, the answer is incorrect. Score: 0

Accepted Answers: 1kPa: neurogenic markers, 10kPa: muscle specific markers, 30kPa: bone-specific markers

3) In cancer, a phenomenon called desmoplasia invokes strong fibrotic responses. This may be caused by:

- Increase in the deposition of Col-I and degradation of Col-IV
Increase in the deposition of Col-IV and degradation of Col-III
Increase in the deposition of Col-III and degradation of Col-I
Degradation of all types of collagen

No, the answer is incorrect.
Score: 0
Accepted Answers:
Increase in the deposition of Col-I and degradation of Col-IV

4) (A) Increase ECM stiffness
(B) Increase invadopodia activity
(C) Increase ECM degradation

(A) is the cause and (B) is the effect
(B) is the cause and (A) is the effect
(B) is the cause and (C) is the effect
Both (A) and (C) are true

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both (A) and (C) are true

5) Which of the following case(s) will correspond to high traction forces?

Cells seeded on top of the stiffer surface
Cells seeded on top of the stiffer surface in the presence of Y27632
Cells transfected with V14 RHO seeded on top of the soft surface
Both a and c are correct

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both a and c are correct

6) Second harmonic generation of ECM collagen fibers revealed extensive collagen crosslinking. This may be associated with

Excessive collagen deposition by cells
Malignant condition
Increase in ECM stiffness
All of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of the above

7) Which of the following factors is rate limiting during confined migration?

F-actin polymerization
Nucleus size
Cell focal adhesions
All of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Nucleus size

8) Inhibiting MMPs of cancer cells induce
9) If HUVEC cells are subjected to oscillatory flow, pYAP/YAP ratio will

- Increase
- Decrease
- Remain constant
- First increase then decrease

No, the answer is incorrect.
Score: 0
Accepted Answers:
Decrease

10) If the following is observed – “dephosphorylation of YAP and nuclear localization of YAP in endothelial cells”, consequence(s) will be

- Distributed flow
- VCAM1/ICAM1 expression
- Integrin beta 2 activation
- Both b and c

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both b and c