

## Unit 5 - Stem cells and Cell fate processes

### Course outline

#### How to access the portal

Week 1 Introduction to Biomaterials and Biocompatibility

Defining tissue engineering scaffolds and implants

Structure and Properties of Proteins and Cells

Stem cells and Cell fate processes

Cell fate processes

Cell Division

Cell Differentiation

Stem Cells

Quiz : Week 4 Assignment

Cell-material Interaction (in vitro and in vivo) and Clinical trials

Manufacturing of Biomaterials (metals, ceramics and polymers)

HA-based Composites

Glass ceramics for orthopedic and dental applications, acetabular socket and femoral head, prototype development

Text Transcripts

## Week 4 Assignment

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-08-28, 23:59 IST.**

1) Apoptosis is a cell fate process that represents

1 point

- differentiation  
 necrosis  
 motility  
 programmed cell death

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*programmed cell death*

2) Mesenchymal and haematopoietic stem cells are

1 point

- unipotent  
 multipotent  
 pleuripotent  
 totipotent

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*multipotent*

3) Aborted embryos are the source of

1 point

- mesenchymal stem cells  
 adult stem cells  
 embryonic stem cells  
 none of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*embryonic stem cells*

4) Cells that form nails and hair are called

1 point

- chondrocyte  
 osteocyte  
 keratinocyte  
 none of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*keratinocyte*

5) Ability of stem cells to divide while retaining its potency is called

1 point

- differentiation  
 self renewal  
 stemness  
 none of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*stemness*

6) Adult stem cells are generally

1 point

- unipotent  
 multipotent  
 pleuripotent  
 impotent

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*multipotent*

7) In which phase does DNA replication occur during the cell cycle?

1 point

- G1  
 M  
 S  
 None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*S*

8) Translation in prokaryotic cells takes place in

1 point

- mitochondria  
 cytoplasm  
 nucleus  
 endoplasmic reticulum

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*cytoplasm*

9) RNA that transfers the genetic information from nucleus to cytoplasm is called

1 point

- trans-membrane RNA  
 messenger RNA  
 transfer RNA  
 ribosomal RNA

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*messenger RNA*

10) Following is not the characteristic feature of a cell undergoing apoptosis

1 point

- blebbing  
 nuclear disintegration  
 migration  
 shrinking

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*migration*

11) Necrosis is the accidental cell death and is generally accompanied by

1 point

- differentiation  
 migration  
 adhesion  
 inflammation

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*inflammation*

12) Before cell division

1 point

- nucleus size increases  
 cell size decreases  
 cell membrane disappears  
 cytoplasm dries up

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*nucleus size increases*

13) PCR is an abbreviated form for the technique known as

1 point

- polycarbonate reaction  
 polymerase chain reaction  
 polymer chain rate  
 polymer chain reaction

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*polymerase chain reaction*

14) Cell fate processes can be best analyzed quantitatively by the following technique

1 point

- densitometer  
 nuclear magnetic resonance or NMR  
 fluorescence assisted cell sorter or FACS  
 infrared or IR

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*fluorescence assisted cell sorter or FACS*

15) Embryonic stem cells are

1 point

- multipotent  
 pleuripotent  
 totipotent  
 unipotent

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*pleuripotent*