

Midterm exam (page 3 of 6) x +

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ZAID MOHAMMAD HUSSEIN AL OMARI

Flag question

☐ c. dermis layer of the skin

☐ d. inner layer of the dermis

Question 15

Not yet answered

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Flag question

All the following are correct about the sheep (Dolly) cloning experiment except

☐ a. The cultured cells used were at G2 phase of the cell cycle

☐ b. Egg activation was achieved by the electric current

☐ c. They used electric current to fuse the mammary gland cell with the enucleated egg

☐ d. They used the mammary gland cells as the donor of the genetic material

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Question 21

Not yet
answered

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Flag question

Epithelial adult stem cells in the lining of the digestive tract occur in deep crypts and give rise to the following cell types except

- ☐ a. entero-endocrine cells
- ☐ b. goblet cells
- ☐ c. absorptive cells
- ☐ d. Follicle cells



**Question 23**

Not yet answered

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Flag question

Totipotency of any cell nucleus can be tested by transplanting the nucleus to enucleated egg of the same species and any substantial activity can be ascribed to the transplanted nucleus

Select one:

☒ True☐ False

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☐ d. Loss of self-worth to DNA donor

Clear my choice


Question 13
Not yet answered
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Flag question

The difference between therapeutic cloning and reproductive cloning is:

- ☐ a. In therapeutic cloning, the enucleated egg is activated by a sperm, while in reproductive cloning it is activated by electric shock
- ☐ b. In therapeutic cloning, the embryo is allowed to develop to the blastocyst stage only, while in reproductive cloning the embryo is allowed to develop to the whole organism after transferring it to a foster mother
- ☐ c. Therapeutic cloning is not ethical, while reproductive cloning is ethical
- ☐ d. The goal of therapeutic cloning is to produce whole organism, while the goal of reproductive cloning is to produce embryonic stem cells for therapy

Question 14

1. Skin adult stem cells are usually residing in:



Clear my choice

Question 12

Not yet
answered

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Flag question

Which of these is not considered a psychological harms of reproductive cloning in Humans?

- ☐ a. Loss of uniqueness to the child
- ☒ b. To avoid homozygosity in case of recessive alleles (Parents are carriers)
- ☐ c. Harms to other participants including eggs donor, gestational surrogates...etc.
- ☐ d. Loss of self-worth to DNA donor

Question 13

Not yet
answered

The difference between therapeutic cloning and reproductive cloning is:



two weeks without differentiating

Question **10**

Not yet answered

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Flag question

1. The ability of adult stem cells to form specialized cell types of tissues other than the place where they reside is known as

- ☐ a. transformation
- ☐ b. transduction
- ☐ c. translation
- ☒ d. transdifferentiation

Previous page

Next page



Question 3

Not yet
answered

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Flag question

The difference between embryonic stem cells and adult stem cells is (are):

- b**
- ☐ a. Adult stem cells are easy to be isolated, while embryonic stem cells are difficult
 - ☒ b. Embryonic stem cells can differentiate to limited types of cells, while adult stem cells can differentiate to all types of cells
 - ☐ c. Adult stem cells are easy to culture, while embryonic stem cells are difficult
 - ☐ d. Adult stem cells are rare, while embryonic stem cells are abundant

Which step of culturing human embryonic stem cells (ESC) contains wrong statement?

- ☐ a. The inner surface of the culture dish is typically coated with feeder layer.
- ☐ b. Human embryonic stem cells are isolated by transferring the inner cell mass into a plastic laboratory culture dish that contains a nutrient broth known as culture medium.
- ☒ c. Over the course of several days, the ESC proliferate and begin to crowd the culture dish.
- ☐ d. The reason for having the mouse feeder cells in the bottom of the culture dish is to give the inner cell mass cells protection from microbes

Clear my choice

To generate cultures of specific types of differentiated cells—heart muscle cells, blood cells for example scientists try to control differentiation of embryonic stem cells by all the following methods except

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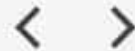
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In comparison between Briggs and king cloning experiment to Gurdon cloning experiment, which of the followings is not true?

a.

Briggs and king used *Rana pepiens* amphibian species while Gurdon used *Xenopus laevis* amphibian species



b.

The first successful cloning was achieved by transplanting the nucleus from the intestine of the tadpole into enucleated egg using *Rana pepiens* species



c.

Gurdon employed the serial nuclear transfer technique, while Briggs and King did not.



d.





Question **19**

Not yet answered

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🚩 Flag question

Embryonic stem cells from a donor introduced into a patient could cause transplant rejection.

Select one:

☐ True

☐ False

Question **20**

Answer saved

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🚩 Flag question





to produce embryonic stem cells for therapy

Question 14

Not yet
answered

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Flag question

1. Skin adult stem cells are usually residing in:

- ☐ a. basal layer of the epidermis
- ☐ b. hypodermis
- ☐ c. dermis layer of the skin
- ☐ d. inner layer of the dermis

Question 15

Not yet

All the following are correct about the sheep (Dolly) cloning experiment except



Question **23**

Not yet answered

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🚩 Flag question

Diseases that might be treated by transplanting cells generated from human embryonic stem cells include all the following except

- ☐ a. headache.
- ☐ b. diabetes
- ☐ c. Parkinson's disease
- ☐ d. traumatic spinal cord injury

Question **24**





Flag question

- ☐ c. dermis layer of the skin
- ☐ d. inner layer of the dermis

Question 15

Not yet answered

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Flag question

All the following are correct about the sheep (Dolly) cloning experiment except

- ☐ a. The cultured cells used were at G2 phase of the cell cycle
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Next page



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- ☐ d. They used the mammary gland cells as the donor of the genetic material

Question **22**

Not yet answered



All the following are examples of adult stem cell plasticity that have been reported during the past few years except

- ☐ a. Brain stem cells may differentiate into: blood cells and skeletal muscle cells.
- ☐ b. Bone marrow stromal cells may differentiate into: cardiac muscle cells and skeletal muscle cells.
- ☐ c. Hematopoietic stem cells may differentiate into three major types of brain cells (neurons, oligodendrocytes, and astrocytes), skeletal muscle cells, cardiac muscle cells, and liver cells
- ☐ d. Neural stem cells in the brain give rise to its three major cell types: nerve cells (neurons) and two categories of non-neuronal cells-astrocytes and oligodendrocytes





Question **17**

Not yet answered

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Flag question

Physical transfection includes all the following except:

- ☐ a. transduction
- ☐ b. electroporation
- ☐ c. microinjection
- ☐ d. particle bombardment (gene gun)

Question **18**

Answer saved



Clear my choice

Question 7

Not yet
answered

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question

In comparison between Briggs and king cloning experiment to Gurdon cloning experiment, which of the followings is not true?

- ☐ a. Briggs and king used *Rana pepiens* amphibian species while Gurdon used *Xenopus laevis* amphibian species
- ☐ b. The first successful cloning was achieved by transplanting the nucleus from the intestine of the tadpole into enucleated egg using *Rana pepiens* species
- ☐ c. The result of both experiments showed that as the age of the transplanted nucleus getting old the rate of cloning success decrease.
- ☐ d. Gurdon employed the serial nuclear transfer technique, while Briggs and King did not.

Question 8
Which step of culturing human embryonic stem cells (ESC) contains wrong statement?



Flag question

- ☐ c. dermis layer of the skin
- ☐ d. inner layer of the dermis

Question 15

Not yet answered

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Next page



Question 1

Not yet answered

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Flag question

All the following are objectives of therapeutic cloning except:

- ☐ a. Avoiding organ rejection by suppressing the patient immune system
- ☐ b. The patient would not have to wait until an unrelated donor dies to obtain a transplant. A new organ could be grown for them as needed.
- ☐ c. There would be presumably no danger of rejection of the transplant because the organ's DNA would match the patient's DNA exactly.
- ☐ d. For transplants involving kidney (or theoretically any other organ that is duplicated in the body), another individual would not have to experience pain.



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Question **23**

Not yet answered

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Totipotency of any cell nucleus can be tested by transplanting the nucleus to enucleated egg of the same species and any substantial activity can be ascribed to the transplanted nucleus

Select one:

☐ True

☐ False



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- ☐ d. Loss of self-worth to DNA donor

Clear my choice

Question 13

Not yet
answered

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1.00

Flag question

The difference between therapeutic cloning and reproductive cloning is:

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- ☐ d. The goal of therapeutic cloning is to produce whole organism, while the goal of reproductive cloning is to produce embryonic stem cells for therapy

Question 14

1. Skin adult stem cells are usually residing in:

Question **21**

Not yet
answered

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Flag question

Epithelial adult stem cells in the lining of the digestive tract occur in deep crypts and give rise to the following cell types except

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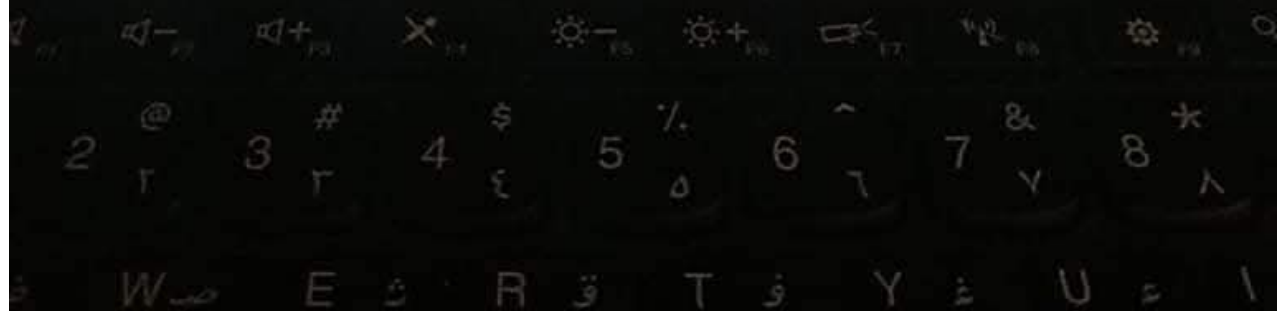
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- ☐ d. The reason for having the mouse feeder cells in the bottom of the culture dish is to give the inner cell mass cells protection from microbes

Clear my choice

To generate cultures of specific types of differentiated cells—heart muscle cells, blood cells for example—scientists try to control differentiation of embryonic stem cells by all the following methods except

re to search





Question **2**

Not yet answered

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Flag question



Adult human stem cells are found in all the following except:

- ☐ a. Lining of the digestive system
- ☐ b. Brain
- ☒ c. Human eyes
- ☐ d. Skin

Clear my choice

Question **3**

Not yet answered

Marked out of 1.00

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Tag question

The process of extracting stem cells involves killing the embryo. To many pro-lifers, this is murder. They feel that murdering one person, the embryo, to cure another person of paralysis, or diabetes, or heart disease, etc. can never be justified.

Select one:

☒ True

☐ False

Question 9

Not answered



differentiated cells—heart muscle cells, blood cells for example, scientists try to control differentiation of embryonic stem cells by all the following methods except



- ☐ a. Modify the cells by inserting specific genes or adding specific growth factors.
- ☒ b. Changing the temperature of cell culture medium
- ☐ c. Alter the surface of the culture dish
- ☐ d. Change the chemical composition of the culture medium

[Clear my choice](#)



New studies indicate that it may be possible to direct the differentiation of human embryonic stem cells in cell culture to form insulin-producing cells that eventually could be used in transplantation therapy for diabetics.

Select one:



True



False

Question 7

Not yet answered

Marked out of 1.00



Question **2**

Not yet answered

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Flag question



Adult human stem cells are found in all the following except:

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- ☐ b. Brain
- ☒ c. Human eyes
- ☐ d. Skin

Clear my choice

Question **3**

Not yet answered

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Flag question



Clear my choice

Question 12

Not yet
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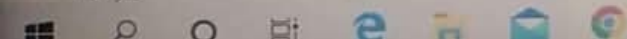
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- ☐ a. Loss of uniqueness to the child
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- ☐ c. Harms to other participants including eggs donor, gestational surrogates.....etc.
- ☐ d. Loss of self-worth to DNA donor

Question 13

Not yet

The difference between therapeutic cloning and reproductive cloning is:





Question 7

Not yet answered

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Flag question



Which of these is not a characteristics of adult stem cells?

- ☐ a. The number of adult stem cells is very rare
- ☐ b. They are usually quiescent and become active upon injury
- ☐ c. It is very difficult to isolate adult stem cells
- ☒ d. culturing adult stem cells is very easy

[Clear my choice](#)

Question 8





Question **4**

Not yet answered

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Flag question



Which of the following organisms embryos must undergo irradiation to increase the percentage of the transfected cells in the developing embryos?

- ☐ a. Mice
- ☐ b. Cows
- ☒ c. Birds
- ☐ d. Fishes

[Clear my choice](#)

Question **5**

Not yet answered





- ☐ b. Bone
- ☐ c. Cartilage
- ☐ d. Heart muscle fibers



[Clear my choice](#)

Question **14**

Not yet answered

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Flag question

1. Bone marrow stromal stem cells generate all the following except:

- ☒ a. red blood cells
- ☐ b. fat cells
- ☐ c. bone
- ☐ d. cartilage





Not yet answered

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Which of these is mismatched?

- ☐ a. Totipotent cell-----Zygote
- ☐ b. totipotent cells-----cells of the four cell stage embryo
- ☐ c. Pluripotent cells____Inner cell mass
- ☒ d. Totipotent cells-----inner cell mass

Clear my choice





Not yet answered

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Flag question



the blastocyst includes all the following parts except:

- ☒ a. Blastoderm cells
- ☐ b. Inner cell mass
- ☐ c. Blastocoel
- ☐ d. Trophoblast cells

[Clear my choice](#)

Question **9**


Not yet answered

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Flag question





- 
- ☐ a. Brain stem cells may differentiate into: blood cells and skeletal muscle cells.
 - ☐ b. Hematopoietic stem cells may differentiate into three major types of brain cells (neurons, oligodendrocytes, and astrocytes), skeletal muscle cells, cardiac muscle cells, and liver cells
 - ☐ c. Bone marrow stromal cells may differentiate into: cardiac muscle cells and skeletal muscle cells.
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[Clear my choice](#)





The difference between embryonic stem cells and adult stem cells is (are):



- ☐ a. Adult stem cells are easy to culture, while embryonic stem cells are difficult
- ☒ b. Adult stem cells are rare, while embryonic stem cells are abundant
- ☐ c. Adult stem cells are easy to be isolated, while embryonic stem cells are difficult
- ☐ d. Embryonic stem cells can differentiate to limited types of cells, while adult stem cells can differentiate to all types of cells

Clear my choice






Question **13**

Not yet answered

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 Flag question



Which of the following is not normally derived from the bone marrow stem cells?


- ☒ a. All types of blood cells
- ☐ b. Bone
- ☐ c. Cartilage
- ☐ d. Heart muscle fibers

[Clear my choice](#)

Question **14**

Not yet answered

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 Flag question





Question **12**

Not yet answered

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18



The vector that can be used to transfer 80-90 kb of DNA is:

- ☐ a. Yeast chromosome
- ☐ b. Multicopy plasmid
- ☐ c. Bacteriophage lambda
- ☒ d. Bacteriophage P1

Clear my choice



All the followings are examples for good cloning in humans except

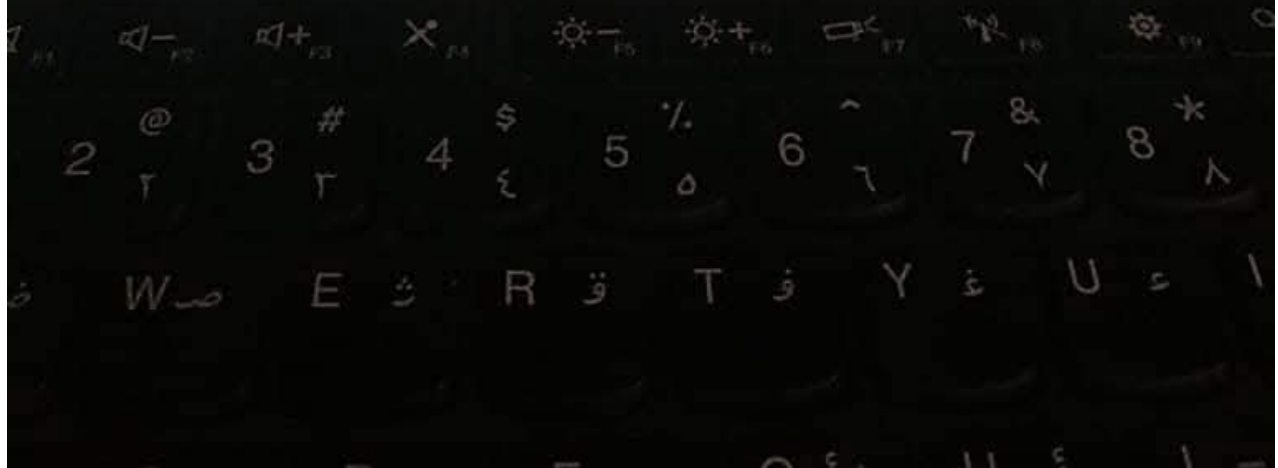
- ☐ a. providing organ transplants
- ☐ b. Treating infertility
- ☒ c. Producing a large number of identical human individuals
- ☐ d. To replace a loved-one

Clear my choice

All the following laboratory tests are used to identifying embryonic stem cells except

- Clear my choice

re to search



21

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question

the blastocyst includes all the following parts except:

- ☐ a. Blastocoel
- ☒ b. Trophoblast cells
- ☐ c. Blastoderm cells
- ☐ d. Inner cell mass

Clear my choice

22

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question

Embryonic stem cells from a donor introduced into a patient could

Select one:

- ☐ True

Type here to search



☐ d. To replace a loved-one

Diseases that might be treated by transplanting cells generated from human embryonic stem cells include all the following except

☒ a. headache.

☐ b. traumatic spinal cord injury

☐ c. Parkinson's disease

☐ d. diabetes

Clear my choice

9

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- ☒ c. To avoid homozygosity in case of recessive alleles (P are carriers)
- ☐ d. Loss of uniqueness to the child

Clear my choice



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Question **4**

Not yet answered

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Flag question



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- ☐ b. Cows
- ☒ c. Birds
- ☐ d. Fishes

[Clear my choice](#)

Question **5**

Not yet answered



1. Skin adult stem cells are usually residing in:

- ☐ a. inner layer of the dermis
- ☐ b. hypodermis
- ☐ c. dermis layer of the skin
- ☒ d. basal layer of the epidermis



☐ d. inner layer of the dermis

[Clear my choice](#)

Question **8**

Not yet answered

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[Clear my choice](#)

Question **9**





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[Clear my choice](#)





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[Clear my choice](#)