Chapter 8 Test

Directions:

This is a 25-question test. Once you've completed it, the answer key will become available.

You may take this test only ONCE.

1) QID: 23998

All of the following are true of the life cycle of a cell **except**

- During the G_1 phase, the cell's protein supply increases.
- The G_2 phase is immediately followed by metaphase.
- DNA replication occurs during the S phase.
- Interphase consists of the G_1, G_2, and S phases.

2) QID: 24000

Which of the following statements regarding cell reproduction is **incorrect**?

- The kinetochore is located within the centromere.
- Chromosomes consist of two sister chromatids.
- The centromere is located at the center of the chromosome.
- Spindle fibers can attach to kinetochores during metaphase.

3) QID: 24001

Spindle fibers are composed of which type of protein?

- actin
- tubulin
- myosin
- troponin

4) QID: 24003

Which of the following regarding plant cell division is **false**?

- Golgi vesicles migrate across microtubules toward the center of the cell.
- Golgi vesicles form a chain in the middle of the cell before the cleavage furrow forms.
- The Golgi apparatus produces golgi vesicles that are made of membrane and contain protein and enzymes.
- Plant cells cannot divide like animal cells because of the presence of a cell wall.

5) QID: 24004

In animal cell division, which of the following events does **not** take place?

- Cells begin to elongate due to the contraction of sliding filaments.
- The contraction of the sliding filaments eventually causes the cell membrane to bend inward.
- The cleavage furrow forms immediately after cytokinesis.
- Two daughter cells, containing two chromosomes each, are produced.

6) QID: 23997

True or false?
A typical animal cell spends approximately twenty-five percent of its life dividing.

- true
- false

7) QID: 598

In human females, meiosis II does not occur until:

- birth
- puberty
- fertilization
- conception

8) QID: 25974

The cell cycle has three major checkpoints, found in the _____, _____, and _____ phases.

- G_0, G_1, G_2
- G_1, G_2, S
- G_1, G_2, M
- G_0, G_1, G_2, M

9) QID: 25977

Which of the following is **incorrect** regarding the cell cycle control system?

- As a cell grows, kinases do not change in concentration.
- The levels of cyclin remain constant throughout the cell cycle.
- In order to be active, a kinase must be attached to a cylin.
- MPF regulates the passage of the cell from G_2 into the M phase.

10) QID: 25982

During the M phase,

- cylin levels are increasing in preparation of the G_2 checkpoint.
- MPF causes the break-down of cyclin by activating proteolytic enzymes.
- excess kinases are removed from the cell by exocytosis.
- the MPF complex initiates meiosis.

11) QID: 25992

The APC is activated when

- protein kinases combine with the anaphase promoting factor.
- MPF cleaves an inhibitor group from the APC.
- all kinetochores are attached to spindle fibers.
- all APC proteins are methylated.

12) QID: 26003

All are characteristics of cancer cells **except**

- unregulated mitosis
- density-dependent inhibition
- no anchorage dependence
- ability to metastasize

13) QID: 26004

A proto-oncogene is

- a regularly occuring gene involved in cell growth and division.
- a viral gene that causes cancer.
- a regularly occuring gene whose product degrades regulatory proteins.
- a gene that normally causes noncancerous tumors to form.

14) QID: 25979

Mammalian epidermal cells at the G_1 checkpoint that do not receive a “go-ahead” signal will

- continually divide, resulting in cancer.
- undergo programmed cell death.
- undergo meiosis.
- switch into a nondividing phase called G_0.

15) QID: 26008

The p53 protein

- is an anaphase promoting factor.
- is a transcription factor.
- functions as a kinase.
- is a cytotoxic protein.

16) QID: 24011

Which of the following statements regarding reproduction is **incorrect**?

- Asexual reproduction produces genetically identical offspring.
- Sexual reproduction can produce genetically unique offspring.
- Both asexual and sexual reproduction involve meiosis.
- Examples of asexual reproduction include budding in coral and binary fission in bacteria.

17) QID: 24022

Which of the following regarding tetrads is **incorrect**?

- Tetrad formation occurs during metaphase 1.
- Tetrad formation never occurs in mitosis.
- Homologous pairs form tetrads.
- Tetrads may form between chromosomes that originated from different parents.

18) QID: 24015

Regarding the role of meiosis, which of the following choices is correct?

- Only the gametes, or sex cells, have undergone meiosis.
- Certain somatic cells can undergo meiosis only after mitosis has occurred.
- Reductive division in humans refers to the reduction of the number of chromosomes from 92 to 46.
- Meiosis produces haploid somatic cells.

19) QID: 24016

Which of the following statements regarding meiosis is **incorrect**?

- Diploid refers to a cell with two sets of each chromosome.
- In meiosis, two major problems are overcome, including dividing the number of chromosomes in half, and sorting the chromosomes.
- Humans have 23 pairs of homologous chromosomes, of which 22 are autosomal.
- Following meiosis, each gamete has two identical pairs of homologous chromosomes.

20) QID: 24019

Regarding homologous chromosomes, which of the following is **incorrect**?

- Homologous chromosomes have genes that control the same traits and control the same functions.
- Homologous chromosomes have identical genes because they are derived from identical parent cells.
- Homologous chromosomes have the same genes although the composition of those genes may or may not be identical.
- In homologous chromosomes, the genes are homologous.

21) QID: 24021

From an evolutionary standpoint, _____ preceded _____.

- mitosis; meiosis
- meiosis; mitosis
- synapse; cell division
- cell division; synapse

22) QID: 24025

When comparing mitosis with meiosis, which of the following statements is **incorrect**?

- DNA replication occurs in a cell before mitotic or meiotic cell division.
- The end result of mitosis is the production of two identical haploid daughter cells, whereas the end result of meiosis is the production of four non-identical haploid cells.
- Metaphase of meiosis differs from that of mitosis because homologous pairs line up only during meiosis.
- The function of mitosis is to produce somatic cells, such as skin, blood and other tissues, whereas meiosis produces gametes.

23) QID: 592

_____ refers to the separation of homologous chromosomes during _____ of meiosis.

- Disjunction; prophase I
- Non-disjunction; metaphase I
- Disjunction; anaphase I
- Non-disjunction; telophase I

24) QID: 596

Which of the following is true of spermatogenesis?

- Sperm production occurs several degrees above body temperature.
- The sperm cell consists of an acrosomal unit, which carries enzymes to penetrate the egg cell, a haploid nucleus, a coiled mitochondrion, and a corpus luteum.
- Primary spermatocytes are diploid, while secondary spermatocytes are haploid.
- The centriole contains the genetic information of the sperm cell.

25) QID: 599

Which of the following regarding oogenesis is true?

- Fertilization triggers the completion of meiosis I.
- Oogonia are the gamete-producing organs in the female.
- Secondary oocytes are diploid.
- After puberty has begun, a primary oocyte is released each month.