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Questions 3, 5, 6

3) How is the zygote, produce by sexual reproduction, different from daughter cells, produced by asexual reproduction?

ans: The zygote has a combination of genes from both parenets, while the cell that undegoes mitosis is identical to the parent.

5) Identify the type of asexual reproduction in each of the following situations:

(a) A multicellular algae is struck by a wave. The algae breaks up and each new piece grows into a new organism.

Ans: Fragmentation

(b) A new tree begins to grow from the root of a nearby tree

Ans: Vegetative reproduction

(c) A small cell begins to grow on the outside of another cell. Eventually, it breaks away from the larger cell and continues to grow.

Ans: Budding

6.

Asexual Reproduction

Advantages	Disadvantages
Does not require a mate/partner	No genetic variability (disease kills all)
Good traits always passed on	Bad traits always passed on
rapid	rapid

Read Page 202-205

Case Study
p. 202 a-p

Case Study p 202
Answers

A) Mother Cell = the cell marked "a"
Daughter Cell = the cells marked "d"

B) Through asexual reproduction, the new cells would be identical to the old ones in both genetic and physical comparisons.

C) Through *sexual reproduction* the new cells would have half the genetic material from any one parent.

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D) Sexual Reproduction
- usually occurs in multicellular organisms
- offspring are not identical to parent cells
- requires genetic material from 2 cells

Asexual Reproduction
- usually occurs in simple organisms
- offspring exactly like parent cell
- genetic material comes from 1 cell

E) Organisms that reproduce sexually may adapt better because they are getting genetic info from 2 sources rather then 1. This gives the offspring more options in terms of what it can do.

F) Through conjugation bacteria can quickly pick up new genes that allow them to do new things. (they are upgrading)

G) Conjugation

- only pieces of genetic info are shared
- it occurs quickly

Sexual Reproduction (humans)

- half of any one parent's genetic info is shar
- slow process, approximately 9 months

H) Fertilizing other eggs varies the gene pool and provides more possibilities for each organism.

i) Worms are slow, do not see well and live in the ground. Being hermaphroditic allows them to vary their gene pool.

K) Internal occurs inside the female's body
External occurs outside their body

L) 23 Chromosomes can be found in both the sperm and the egg.

M) Summertime brings more food and resources for reproduction, therefore being female in the summer makes use of these benefits.

N) No, asexual reproduction means they are exact copies of the original which in this case are females.

O) Reproducing sexually varies the gene pool.

P) Asexually is

- **quick**
- **you don't have to find a mate**
- **It also guarantees what the offspring will be.**

Sexually provides variability for the next year's generation.