Genetically modified organisms

Read Chapter 10.6

Fill in the blanks

1. Genetically modified organisms can be plants or animals that have extra _____.
2. Mr. Green Genes was the first glow-in-the-dark _____.
3. Goats have been modified to produce _____.
4. Match the animal with the transgenic trait. Cow, pig, goat, mouse, salmon, aquarium fish, corn, soybeans, cat, papaya (you may use some more than once)
    a. Antiviral proteins _____
    b. Deleted or dysfunctional gene _____
    c. Spider silk _____
    d. Human antibodies _____
    e. Herbicide resistance _____ and _____
    f. Growth hormone _____
    g. Luciferase _____ and _____
    h. Green fluorescent protein _____ and _____ and _____
    i. Phytase enzyme _____
    j. Bt toxin _____ and _____
5. Put the following stages of producing a genetically modified animal, such as a goat, in order:
    a. Implant blastocyst into a pseudopregnant female goat _____
    b. Isolate gene of interest, such as spider silk gene _____
    c. Recombinant DNA is microinjected into an egg cell _____
    d. Female has offspring that are transgenic _____
    e. Pure population of transgenic cells are grown in a petri dish _____
    f. Spider silk gene is ligated to an appropriate promoter in a plasmid _____
6. Eukaryotic cells modify proteins in the _____ and can be more reliable than _____ for producing complete functional proteins.

7. Mice can be used in research for studying the function of specific genes by deleting those genes, these mice are called _____ mice.
8. Plants can be modified to produce:
    a. _____
    b. _____
    c. _____
9. Some genetically modified plants contain extra nutrients, such as _____ contains a gene that converts beta carotene into vitamin A.
10. Insect-resistant crops can contain a gene for _____ toxin. When insects ingest the toxin it creates pores in their _____.
11. Over time, insects can become _____ to Bt toxin and then new genetic modifications are required.
12. Plant cells can be infected with bacteria containing a _____ plasmid that contains unique DNA
13. Name 2 drugs that can be produced in animals:
    a. _____
    b. _____
14. Sometimes genetically engineered genes can be transferred into closely related species through _____.