

3215 Exam/Quiz #2
Studyguide
Concepts and Questions

First, be familiar with the basic scientific and ethical concepts discussed:

- Prenatal Imaging and Screening
- Amniocentesis, CVS, Ultrasound, MRI, etc.
- IVF
- PGD
- Gene Therapy Technology
- Cloning
- Somatic vs germline gene therapy
- Viruses
- Viral vectors
- Integrating and non-integrating viruses (retrovirus and adenovirus)
- Insertional mutagenesis and immune response
- Homologous recombination (targeted gene insertion or “knockout” technology)
- Reproductive and Therapeutic cloning
- Chimeras
- Transgenics
- Therapy, Prevention, Enhancement
- Ethics Punnett Square
- Genetic diversity
- Heterozygote advantage
- Polygenetic traits (vs. monogenetic)
- Genotype and phenotype
- Alternative splicing
- Pleiotropy
- Epigenetics and development
- Threats (Benefits) to family, parents, and human relationships
- Threats (Benefits) to social organization and fairness (a.k.a., justice)
- Threats to human nature and “playing God” objections
- Parental/Reproductive Autonomy
- “New Eugenics” and Genobility
- Status quo bias
- Dual-use dilemmas and unintended consequences

Second, be able to intelligently answer questions like the following. That is, be able to explain the relevant science/technologies and the ethical challenges involved:

- Who uses reprogenetic technologies? Why?
- What are the medical risks and benefits associated with each technology?
- What are the social risks and benefits associated with each technology?
- Who is Louise Brown? Why is she important?
- What are the traits that should or shouldn't be selected for using reprogenetic technology?
Be prepared to give an example or two.
- What is parental autonomy and reproductive autonomy, and how does it play in arguments for or against the use of certain reprogenetic choices?
- What are the objections that appeal to the instrumentalization, commodification, and devaluation of human life?
- Why be worried about slippery slopes and a “new” eugenics? Why not?
- What are some of the complexities of genomics that make decisions about reprogenetic choices particularly difficult?
- What is the “status quo bias”? How is it used in arguments about reprogenetic choices?