

Physics 221
Exam 2
Take home portion

You are encouraged to discuss this material with your classmates but are required to do your own work.

Directions: Use your own words to demonstrate your understanding of the concepts. Direct quotes from the sources below are not acceptable unless they are followed by an interpretation in your own words. For each question, describe in detail as if you are talking with someone who has not taken this class. All answers must explain “how” and “why” they are true. All answers must be grammatically correct and typed, with the exception of any equations or diagrams.

Read about Corneal Refractive Therapy (CRT) (a type of Orthokeratology) here:

<http://www.paragoncrt.com/consumers/index.asp> (read overview and how it works tabs) and <http://www.nsvc.com/services-crt.html>

and for more detail you may be interested in: <http://en.wikipedia.org/wiki/Orthokeratology>

1. How does Corneal Refractive Therapy (CRT) work? Describe what it does to your eyes to allow clear vision without contacts or glasses. Include a diagram.
2. Describe how long it takes once treatment begins before a person can see clearly.
3. Provide separate listings of common side effects/draw backs and rare side effects. Include the number of people out of 100 who suffer from each of these side effects.
4. Is CRT used to treat myopia, hyperopia and/or astigmatism? Why?
5. Explain how CRT can be used to permanently reduce myopia in children. After CRT therapy, can a child permanently stop using CRT and continue to have clear uncorrected vision?

Read about LASer In Situ Keratomileusis (LASIK) here:

<http://www.youtube.com/watch?v=7PJ391MDtpo>,

<http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/SurgeryandLifeSupport/LASIK/default.htm>

and <http://www.youtube.com/watch?v=O4kDC4sZ5Jg> for more detail you may be interested in:

<http://en.wikipedia.org/wiki/LASIK>

6. Concisely describe what LASIK does to your eyes to allow clear vision without contacts or glasses. Include a diagram showing the changes to the eye that produce clear vision. You are limited to one paragraph. Points will be deducted for superfluous information that is not directly answering the question
7. Describe how long it takes once treatment begins before a person can **see clearly**.
8. Provide separate listings of common side effects and rare side effects. Include the number of people out of 100 who suffer from each of these side effects.
9. Compare and Contrast appropriate candidates for CRT and LASIK? Include age restrictions for candidates as well as physical conditions which make poor or unacceptable candidates. Explain specifically why this is the case for each example you provide.