# Optics And Endoscopy

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| 1. Define ‘total internal reflection (TIR)’ and outline the conditions under which it occurs. 2. Define ‘critical angle’ and calculate this for a range of different conditions. 3. Explain how a fiber-optic cable works. 4. Discuss the role of fiber-optic cables in endoscopy. 5. Define ’acceptance angle’ and ‘numerical aperture’ and calculate these for a range of different conditions. 6. Discuss the significance of the above with regard to fiber-optics in endoscopes. | | | |
| TIR2 | [http://tbn0.google.com/images?q=tbn:NyVP5p_8QMAJ:http://www.vector-project.com/image/proj/VECTOR_OVE_fig01.jpg](http://www.vector-project.com/image/proj/VECTOR_OVE_fig01.jpg) | http://www.ucl.ac.uk/surgery/nmlc/myimages/biopsy.jpg | **endoscope** |