

KING'S COLLEGE LONDON
INSTITUTE OF PSYCHIATRY
MSc NEUROSCIENCE EXAMINATION
12th March 2014 at 14.00-16.30pm
Neuroimaging
B5 WRITTEN EXAMINATION

Answer FOUR questions only

1. What does BOLD stand for? Describe the physiology and physics that underpin the BOLD effect.
2. How has neuroimaging improved our understanding of psychotic illness?
3. Describe two of the most common pre-processing steps for functional MRI data and explain why they are needed.
4. What is temporal lobe epilepsy and juvenile myoclonic epilepsy? What has neuroimaging revealed about these two disorders?
5. How is neuroimaging used clinically to diagnose dementia?
6. Describe the symptoms, course and treatment of bipolar disorder. What evidence of white matter abnormalities have been found from neuroimaging studies in bipolar disorder?
7. Describe how Diffusion Tensor Imaging can be used to quantify white matter properties in vivo. What are the two main measures used to characterise diffusion in the brain?
8. How can neuroimaging be used to aid planning for the neurosurgical removal of a brain tumour?