

NEUROSCIENCE MSc EXAMINATION

For Students of the
INSTITUTE OF PSYCHIATRY
King's College London

8th March 2012 10:00 - 12:30

B2 Addiction Biology

Answer **FOUR** questions only

1. Compare and contrast Positron Emission Tomography and functional Magnetic Resonance Imaging for understanding the long term consequences of drug addiction on brain function.
2. The genes encoding the enzymes ADH and ALDH are functional candidates for alcohol dependence and related disorders; how do they influence the phenotype?
3. Discuss the rationale and research evidence for treating substance use disorders with combined medication and behavioural therapies.
4. What is the purpose of biological tests in drug and alcohol treatment settings? In your answer give a rationale for each purpose with appropriate examples.
5. Define the key stages of development and describe the key biological systems that are affected by exposure to drugs during development.
6. Discuss the challenges associated with the diagnosis and treatment of concurrent addictive and psychiatric disorders.
7. Describe the mechanism(s) of action for the psychostimulants amphetamine and cocaine. Discuss how these drugs interact with the brain reward pathways, and the relevance for addiction-related behaviour.
8. Discuss the evidence which demonstrates that drug dependence is associated with impaired decision making ability.