UNIVERSITY OF LONDON

NEUROSCIENCE MSc EXAMINATION

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

17th January 2014 at 14:00 - 16:30

B MODULE PAPER

Answer FOUR questions only

1. Describe a gene therapy strategy for the treatment of Parkinson's disease.

2. Describe the advantages and limitations of mouse models of Alzheimer's disease.

3. Outline the contribution that studies of the rare familial forms of Alzheimer's disease have made to our understanding of the much more common sporadic forms of these diseases.

4. Describe the strategy behind the use of partial agonists in the treatment of morphine, cocaine, amphetamine, and nicotine dependence. In your answer include named examples of the clinically-prescribed drugs for each of the abused drugs listed.

5. What is a second-order schedule of reinforcement and how can this schedule be utilised to examine drug craving and relapse in laboratory animals?

6. How can autophagy be manipulated to treat neurodegenerative diseases?

7. How would you model human neurodegeneration in Drosophila? Please illustrate with reference to one disease.

8. Has investigating cell signalling helped our understanding of mechanisms underlying Alzheimer's disease?

9. Describe the concept of "theory of mind" and the experimental challenges related to its assessment.

10. What is the Default Mode Network of the resting brain and what is its function?

11. Do you believe the amyloid cascade hypothesis, and why?