

UNIVERSITY OF LONDON
MSc NEUROSCIENCE EXAMINATION
INSTITUTE OF PSYCHIATRY
King's College London
4th March 2013 at 13.30-16.00pm
Developmental Neurobiology
B3 WRITTEN EXAMINATION

Answer **FOUR** questions only:

1. Compare and contrast the molecules involved in neural induction in two different model systems.
2. Discuss the importance of environmental cues in directing neural crest development.
3. Critically review the evidence that both microtubules and actin filaments are important for growth cone pathfinding.
4. How do human axon guidance syndromes inform us about fundamental mechanisms of axon navigation?
5. How might plastic changes at the axon initial segment affect neuronal function?
6. Describe how the retinotectal/retinocollicular map is organised and the evidence that neural activity is required for the formation of a precise map.
7. Discuss the relationship between the transcriptome and the epigenome and how dysregulation of one or both can contribute to CNS disorders.
8. Explain how neurons and astrocytes are generated in sequence from neural progenitor cells during development.