Summer Examinations 2016

SLS300216N

Module Title: Integrated Medical Genetics
Level: Six
Time Allowed: Two Hours

Instructions to students:

- Enter your student number **not** your name on all answer books.
- Answer **two** out of **four** questions.
- All questions are equally weighted.
- Begin each question in a separate answer book; label each answer book clearly with the number of the question you are answering.
- Neither books nor notes may be taken into the examination.
- Students are **not** permitted to remove this examination paper from the examination room. For all purposes the examination paper remains the property of the University of Northampton.

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Answer **two** of the following questions:

1. Discuss the evidence that telomere shortening might predispose to age-related disease.

2. Evaluate the contribution of the microtubule-associated protein tau to the pathogenesis of Alzheimer’s disease and fronto-temporal dementia with Parkinsonism linked to chromosome 17 (FTDP-17).

3. Discuss how epigenetic factors regulate the expression of genes and provide at least **two** examples of disease processes that are thought to arise as a result of abnormal epigenetic regulation.

4. Discuss how you would design and conduct an experiment to establish whether genetic variation is important in the predisposition to attention deficit hyperactivity disorder (ADHD). In constructing your answer assume that you have unlimited access to any resources that you would need. You should comment on any difficulties that you might expect to encounter and how you might overcome them.