UNIVERSITY OF BOLTON

SCHOOL OF SPORT AND BIOLOGICAL SCIENCES

BSc (HONS) BIOLOGY

SEMESTER ONE EXAMINATIONS 2018/19

MOLECULAR EVOLUTION

MODULE NO: BIO6004

Date: Friday 18 January 2019   Time: 10.00 am – 1.00 pm

INSTRUCTIONS TO CANDIDATES:

Candidates are advised that the examiners attach importance to legibility of writing and clarity of expression. YOU ARE STRONGLY ADVISED TO PLAN YOUR ANSWERS

There are **FIVE** questions.

Answer **ANY** three questions.

All questions carry equal marks.

Marks for parts of questions are shown in brackets.

This examination paper carries a total of 150 marks.

All working must be shown. A numerical solution to a question obtained by programming an electronic calculator will not be accepted.

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Molecular Evolution
Module No. BIO6004

Answer ANY THREE questions

PLEASE USE A SEPARATE BOOKLET FOR EACH ANSWER.

1.

a) Describe the differences between absolute and relative quantifications in qPCR?

[15 marks]

b) Evaluate the differences between one-step and two-step RT-qPCR?

[35 marks]

[Total 50 marks]

2.

a) Give an account of a selection of different theories relating to the evolution of eukaryotic cells.

[30 marks]

b) Which of the theories described above seem the most plausible? Justify your answer.

[20 marks]

[Total 50 marks]

3.

Is polymorphism advantageous to the survival of species?

Include a number of named examples to support your in-depth answer.

[50 marks]

PLEASE TURN THE PAGE

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4.

a) Give a detailed and illustrated overview of the technique of genetic fingerprinting.

[30 marks]

b) Using named examples, evaluate the impact of the different applications of genetic fingerprinting to date.

[20 marks]

[Total 50 marks]

5.

a) Describe the different methods of biological classification. Include named examples.

[30 marks]

b) Which method discussed in 5a) do you consider to be the most accurate? Explain your rationale.

[20 marks]

[Total 50 marks]

END OF QUESTIONS