BIRKBECK COLLEGE
(University of London)

BSc EXAMINATION

SCHOOL OF SCIENCE

Structural Geology 1 Theory

EASC011H5

15 Credits

Wednesday 6 May 2020 09:30-12:30

Time allowed: 3 hours

INSTRUCTIONS

Answer THREE questions from the six questions provided.

ALL QUESTIONS CARRY EQUAL MARKS.

Candidates must NOT bring any supplementary material into the examination.

Calculators are NOT permitted.

1. Give an account of Type 1, Type 2 and Type 3 polyphase folds, commenting on the superposition of lineations and foliations from subsequent fold phases.

2. Describe the microstructures and strain rate histories of both brittle fault zones and their underlying plastic shear zones, commenting on how these influence the occurrence of earthquakes.

3. Describe strike-slip fault systems, including details of their evolution through time, and restraining bends and releasing bends.

4. Show how joints, veins and stylolites form in relation to:
   (i) strain in fold limbs;
   (ii) displacement gradients on normal faults;
   (iii) amplitude gradients on folds.

5. Give an account of the structures associated with EITHER constructive plate boundaries OR destructive plate boundaries.

6. Write short notes on THREE of the following:
   i) crustal strain measured with Global Positioning System (GPS) data;
   ii) stress in collision zones and rift basins;
   iii) The World Stress Map;
   iv) subduction roll-back.