PRIFYSGOL ABERYSTWYTH UNIVERSITY

SEMESTER ONE EXAMINATIONS 2026

GS30320: Biogeochemistry and Health

Time allowed : **2 Hours**

YOU MUST ANSWER TWO QUESTIONS.

STUDENTS MAY SUBMIT ANSWERS TO THIS PAPER IN EITHER WELSH OR ENGLISH

Once seated, students may complete the front cover of the answer book(s) and the attendance slip ONLY.

DO NOT TURN THE EXAMINATION QUESTION PAPER OVER UNTIL INSTRUCTED TO DO SO.

1. Discuss, using examples, the geochemical processes responsible for element contamination from the drainage of water from mine adits and mine waste tips.

[50%]

2. Discuss how the smelting of metalliferous ores and their concentrates has been responsible for the widespread distribution of several potentially harmful elements in the environment, using examples.

[50%]

3. The World Health Organisation limit for arsenic in drinking water is 10 micrograms per litre. This limit is exceeded in many parts of the world and has led to serious human health effects. Discuss the sources of arsenic in drinking water and the health effects of consuming arsenic-enriched waters, quoting examples from the geographical areas considered.

[50%]

4. With consideration of natural vs anthropogenic radioactivity, discuss the radioactivity sources and consider which poses the greater risk to human health.

[50%]

5. Describe how humans have perturbed the N and P cycles, with consideration of the sources, pathways and transformations of the element.

[50%]

6. “Microbes impact chemical species in the environment and the formation of solid minerals” Discuss this statement.

[50%]

END OF PAPER