RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

BSc in Applied Sciences

Second Year Semester I Examination– June / July 2022

PHY 2109 – PHYSICAL GEOLOGY

Time: One (01) hour

Answer two questions only.

1. **a)** List the different types of seismic waves generated by an earthquake and explain their characteristics. (08 marks)

b) "*Primary (P) waves travel through solids, liquids and gasses whereas Secondary (S) waves travel only through solids*"

Briefly explain the above statement. (12 marks)

c) Discuss how the seismic waves are used to determine the internal structure of the earth. (10 marks)

d) Compare and contrast the S – wave shadow zone and the P – wave shadow zones produced by the refraction of seismic waves. You may use diagrams where appropriate. (20 marks)

2. **a)** Explain how interactions at tectonic plate boundaries may result in earthquakes, volcanic activity and new landforms. (20 marks)

b) "Sea floor spreading" is one of the aspects of plate tectonics which accounts for major geological features and tectonic activity across the earth.

By way of a clear diagram show how sea floor spreading is caused by <u>two divergent oceanic plates</u>. (10 marks)

c) Explain in detail why a minimum of three seismograms from three different seismographic stations is needed to locate the epicentre of an earthquake. (10 marks)

d) Discuss the importance of the determination of the epicenter of an earthquake as far as the Tsunami vulnerability is concerned. (10 marks)

3. Write **short notes** on the following;

a) Richter scale and Mercalli scale. (12 marks)

b) Relative age principles used to determine the relative ages of rock strata. (12 marks)

c) Basic concept of seismometers. (13 marks)

d) Rock cycle (13 marks)

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