



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B. Sc. (General) Degree in Applied Sciences
Third Year - Semester II Examination – October / November 2017

PHY 3105 – PHYSICAL GEOLOGY

Answer two questions only

Time: One hour

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01. Mass wasting is a geomorphic process by which soil, regolith and rock move down slope under the force of gravity.
- (a) Distinguish between slope failures and sediment flows which are two mass wasting processes. [15 marks]
 - (b) List the factors contributing to the mass wasting and discuss each of them in detail. [15 marks]
 - (c) What are the common features of a slope where creep (kind of a granular flow) exists? [10 marks]
 - (d) What is a debris avalanche? Discuss the devastating features associated with it. [10 marks]
02. (a) What are the special features of minerals? [10 marks]
- (b) “X-Ray Diffraction (XRD) is a widely used materials characterization technique by which minerals can be characterized whereas glasses cannot be”
Substantiate the above statement. [10 marks]
- (c) What are the relative age principles used to establish relative sequences of geologic events and processes? Explain them in detail. Use diagrams where appropriate. [15 marks]
- (d) Explain why the zircon ($ZrSiO_4$) is widely used in U/Pb dating. [15 marks]

03. Write short notes on the following;

- (i) Rayleigh waves and Love waves. [12 marks]
- (ii) San Andreas fault. [12 marks]
- (iii) Physical properties of minerals. [12 marks]
- (iv) P – wave and S - wave shadow zones. [14 marks]

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