

Faculty of SCT
2nd Semester Examination - 3rd year 12017
Applied Geophysics & Engineering Geology
Part B

1. (a) Explain "diurnal variation" of the Earth's magnetic field.
(b) Discuss why it is necessary to account for the diurnal variation when magnetic data are processed.
(c) Describe in detail how you would carry out a regional geomagnetic survey with the objective of exploration for metallic ores. Identify preliminary data requirements, platform to be used and survey grids.
(15 marks)
2. Assuming that you are the Hydrogeologist of the regional Water Authority, describe in detail how you would explore and exploit groundwater resources of the area to provide water for a community. Your answer should include a description of the geophysical technique you would employ in the exploration phase.
(15 marks)
3. (a) Explain the geological aspects that should be seriously considered in a water diversion project that involves all related standard engineering structures and components.
(b) Some of the geotechnical engineering projects of Sri Lanka have been severely affected by unfavourable geological conditions. Describe one such case in detail.
(15 marks)
4. Write short notes on the following geotechnical engineering parameters.
(a) Rock Quality Designation (RQD)
(b) Atterberg Limits
(c) Standard Penetration Test (SPT)



(15 marks)