

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCE	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Advanced Geo-technical Engineering (*Elective II*) (CE76512)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. a) Explain the scope of geotechnical engineering in context of modern day development. [4]
 b) What are the reasons for installing instrumentation? On what basis instruments are selected? What are the various applications of instrumentations? [4+3+5]
2. a) How is earth pressure measured? Explain how a typical pneumatic earth pressure cell works. [8]
 b) What are the applications of ground anchors? What are the bases of classification of anchors? [3+5]
3. a) Explain permeability, permittivity and transmittivity of a geotextile fabric. [6]
 b) What is geosynthetic and what are its various types? What are the various functions to be fulfilled by geosynthetics? [3+7]
4. a) How materials are selected for an efficient shotcreting? [8]
 b) A clay-cement-water grout has a density of 1.80 t/m^3 . After air entrainment, the mixture has a density of 1.44 t/m^3 . Calculate expansion coefficient, bulking coefficient and air ratio. [8]
5. a) What is an earthquake and how does it occurs? Write about the various seismic hazards. [8]
 b) What are the different types of seismic waves produced when an earthquake occurs? [8]
