

# Midterm Exam

October 25th, 2022

1. Compare the Terzaghi weight function to correct an orientation bias for a scanline survey with the weight function for a window sampling. [10]
2. Explain the clustering algorithm suggested by Mahtab & Yegualp (1982). [15]
3. Explain the fuzzy K-means clustering algorithm suggested by R.E. Hammah & J.H. Curran (1998). [15]
4. Estimate Fisher's constant K of the joint set consisting of following joints adopting the generalized truncated Fisher distribution in which the limiting angle of a joint set ( $\theta$ ) is defined as 40 degrees. [30]

Dip direction (°)	Dip (°)
030	60
025	40
022	50
032	55
040	35
045	70

5. Explain three kinds of estimation methods of a trace length distribution defined in an infinite plane,  $f(l)$ , using a complete trace length distribution from a scanline,  $g(l)$ , a semi-trace length distribution from a scanline,  $h(l)$ , and a contained trace length distribution from a sampling window,  $f'(l)$ . [30]