National Institute of Technology Hamirpur

**Mid Semester Examination**

**CED – 313 Foundation Engineering**

# Time: 1.5 Hours Maximum Marks: 30

Q 1. Discuss the friction circle method of stability of a finite slope. Explain Taylor’s

stability number.

(7, 3)

Q 2. Illustrate the design of a cantilever sheet pile wall of height ‘H’ in a granular soil

considering the presence of water table at depth ‘h1’ below the top level of the wall.

(10)

Q 3. A retaining wall ‘h’ m high has a vertical back and supports cohesive backfill whose

surface is level with the top of the wall. The properties of the backfill are:

Angle of friction φ = zero, unit weight γ = 18 kN/m3 and cohesion c = 20 kN/m2.

Determine the magnitude and point of application of the active earth pressure per

metre length of the wall considering the effect of development of tension cracks.

Value of height ‘h’

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Roll No. | 1 to 20 | 21 to 40 | 41 to 60 | 61 to 80 | 81 to 100 | 101 onwards |
| Value of ‘h’ (m) | 4.0 | 4.5 | 5.5 | 6.0 | 6.5 | 7.0 |

(10)