

FIRST MID-TERM EXAM
(Closed Book 1 hr)

Name: _____

Number: _____

Question 1. (20%)

- a - What is Trafficability?
- b- Factors considered to select an equipment are:
- c - The major advantage of draglines over other crane-shove family is:
- d- Advantages of shovel and backhoe over clamshell and draglines are:

Question 2. (30%)

A gross weight of a wheel tractor is 70,000 lb. and its weight on the driving wheels is 40,000 lb. and produces a maximum rimpull of 50,000 lb. at sea level. The tractor is being operated at an altitude of 2,800 ft on common earth (coefficient of traction is 0.6). A pull of 28,000 lb. is required to move the tractor and its load. Can the tractor perform under these conditions?

Question 3. (50%)

Select the best dragline from the two listed below to excavate a drainage ditch 10 ft deep having a bottom width of 10 ft and side slope of 1:1. The dragline will move along the center line of the excavation and deposit one-half of the spoil on each side of the cut. Provide 7 ft of clear space between the edge of the cut and the near side of the spoil bank. The soil is common earth with an angle of repose of 37° and swell of 25%. Use an efficiency factor of 0.84 and an average depth of cut of 5 ft. Following are the dragline data:

Size CY	Dumping radius	Ideal output BCY/hour	Optimum depth of cut (ft)	Cost/hour
1	31 ft	135	8 ft	SR 100
1 3/4	40 ft	210	9.5 ft	SR 120

What is the estimated cost per bank cubic yard of excavation for the chosen dragline?