ABE 325

Soil and Water Conservation Engineering

Check List for Exam 1

This list is to assist you in reviewing for the first Midterm Exam.

1. Discuss and review global issues in soil and water resources
2. Describe all of the hydrological processes presented in class
3. Describe the hydrologic, Nitrogen and geologic cycles
4. Describe the hydrological, biological, meteorological systems and their interactions
5. Describe and define soil composition, texture, and structure
6. Understand and define soil textural classification
7. Construct soil particle size distribution curves knowing the particle distribution
8. Conduct basic soil physical properties and computations
9. Derive the soil water properties introduced in class and used in the homework
10. Generate probability and return period/rainfall curves from rainfall data
11. Conduct point-area rainfall data correction
12. Conduct risk analysis as it relates to rainfall analysis and return period concept
13. Perform frequency determinations for long record case
14. Apply the three probability distributions for any statistical record: log normal, extreme value, and log pearson distributions
15. Perform mean area precipitation calculation
16. Construct and use IDF curves
17. Apply Darcy's law to saturated porous media flow problems
18. Explain hysteresis effect in soils and define the soil moisture characteristic curve
19. Discuss the factors affecting infiltration
20. Describe the surveying equipment, their function, and use
21. Describe and apply the basic theory of differential, profile and cross-section leveling
22. Compute page check, error, closure, and elevation computations from BS and FS readings.
23. Read topographic maps
24. Define contour lines properties
25. Plot contour lines and label them using grid elevation data