King Saud university

College of Engineering CE 382 – Geotechnical Engineering

Civil Engineering Department Second semester 1428 -1429H

QUIZ ( 1 )

NAME : …………………………………………………………………….. ID Number : ………………………………………

**Problem 1 :-**

Following are the results of sieve analysis :

|  |  |
| --- | --- |
| U.S.sieve no. | Mass of soil retained on each sieve ( g ) |
| 4 | 0 |
| 10 | 18.5 |
| 20 | 53.2 |
| 40 | 90.5 |
| 60 | 81.8 |
| 100 | 92.2 |
| 200 | 58.5 |
| Pan | 26.5 |

Determine the percent finer than each sieve size and plot a grain-size distribution curve.

**Problem 2:-**

A hydrometer test has the following results:-

Gs = 2.7

Temperature of water = 24ْC

L = 9.2 cm at 60 minutes after the start of sedimentation.

What is the diameter D of the smallest-size particles that have settled beyond the zone of the measurement at that time (that is, t = 60 min)?

**Problem 3:-**

The particle-size distribution curve of soil is given in the below:

1- Determine D10 , D30 , D60 from the grain-size distribution curve.

2- Calculate the uniformity coefficient Cu .

3- Calculate the coefficient of gradation, Cz .

4- Determine the percentages of gravel, sand, silt and clay (according to the USDA system.)

5- Determine the percentages of gravel, sand, silt and clay (according to the AASHTO system.)