1. For Soil X, Plasticity Index, PI = (ωL)X – (ωP)X = 0.62 – 0.26 = 0.36

For Soil Y, Plasticity Index, PI = (ωL)Y – (ωP)Y = 0.34 – 0.19 = 0.15

 Hence, Soil X contains more clay particles.

1. Soil X:

eSr = ωG 🡺e = ωG/Sr = 0.38 x 2.72 = 1.0336

$$ρ\_{X}=\frac{G+eS\_{r}}{1+e} x ρ\_{w}=\frac{2.72+1.0336 x 1}{2.0336} x 1000=1845.79\frac{kg}{m^{3}}$$

 Similarly, for Soil Y:

 e = 0.6675

 ρY = 2001.50 kg/m3

 Hence, Soil Y has greater wet density.

1. $\left(ρ\_{d}\right)\_{X}=\frac{ρ\_{X}}{1+ω}=\frac{1845.79}{1+0.38}=1337.53\frac{kg}{m^{3}}$

 Similarly, $\left(ρ\_{d}\right)\_{Y}=1601.20\frac{kg}{m^{3}}$

 Hence, Soil Y has greater dry density.

1. Soil X has greater void ratio. (From (ii), void ratio of soil X is 1.0336 whereas void ratio of soil Y is 0.6675.)