

3D1 SOIL MECHANICS

ANSWERS

1. (a) $e_{\max} = 0.849$, $e_{\min} = 0.500$, $e_{\text{comp.}} = 0.620$, $I_D = 66\%$
(b)(i) –
(ii) 27 m

2. (a) (i), (ii) –
(b) (i), (ii), (iii) –
(iv) $H = Bs_u$, $V = (1 + \pi/2 + 2\sigma_s/s_u)Bs_u$

3. (a) (i), (ii), (iii) –
(b) (i) 3.00 MN
(ii) 2.36 MN
(iii) 1.68 MN

4. (a) $(G_s - 1)kz/\lambda$
(b) $10.9k_1 \text{ m}^2/\text{s}$
(c) Settlement at 3 months = 50 mm
Settlement at 12 months = 98 mm
Ultimate Settlement = 156 mm