

Printed Pages : 3



AR603

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 181603

Roll No.

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B. Arch.

(SEM. VI) THEORY EXAMINATION, 2014-15
ARCHITECTURAL STRUCTURES - VI

Time : 3 Hours]

[Total Marks : 50

- Note :**
- (1) Attempt any five questions.
 - (2) All Questions carry equal marks.
 - (3) IS code is allowed.
 - (4) Assume any missing data.

1 A retaining wall is shown in **fig. 1**.

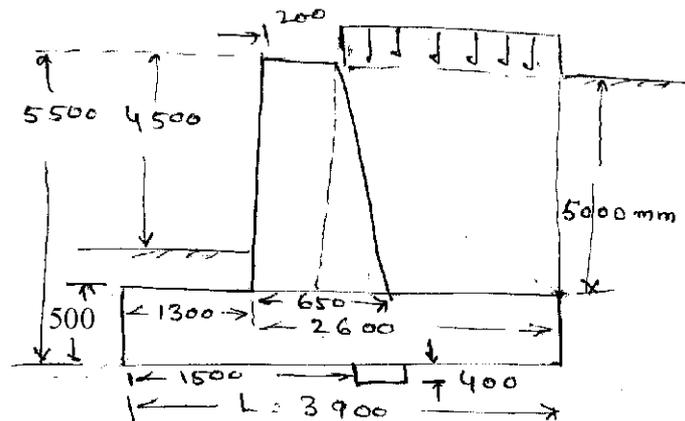


Fig. 1

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[Contd...

Back fill

$$\gamma_c = 25 \text{ kN/m}^3$$

$$\text{Surcharge} = 40 \text{ kN/m}^2$$

$$\phi = 30^\circ$$

$$\mu = 0.5$$

$$\gamma_e = 16 \text{ kN/m}^3$$

$$q_a = 160 \text{ kN/m}^2$$

$$w_s = 40 \text{ kN/m}^2$$

Determine the overturning moment.

- 2 Calculate factor of safety (F.S.) for overturning and sliding for retaining wall shown in **fig. 1**.
- 3 Draw a retaining wall with inclined backfill at an angle θ . Draw a neat diagram showing active and passive pressure, reacting force R , W , μR and P_p .
- 4 Draw pressure diagram for partly submerged plane backfill retaining wall.
- 5 A tread and riser stair case is spanning longitudinally. Draw B.M. for tread and riser and shear force in treads. Also draw detailed reinforcement.

- 6 A straight stair case is made of independent tread slabs connected to wall transversely. $T = 300$ mm, $R = 150$ mm, width of flight is 1.5 m. Live load as per code. Use M 20 concrete and Fe 250 steel.
- 7 (a) Draw various types of folded plates.
- (b) Determine the meridional and longitudinal N_Q, N_ϕ in a cylindrical shell of Radius R capped on both sides with hemispherical shell for internal pressure p .
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