Bench Terrace Numerical

Q1. For the eastern Himalayan region having hill slope of 16%, a bench terrace system is to be designed. It is found that the depth of cut for constructing the bench terrace cannot be more than 0.40 m due to the limitation of the soil depth. If a batter slope of 1/2 : 1 is proposed, the maximum possible width of the terrace and the required earthwork per hectare (assuming cut equal to fill) will be   [GATE 2011]
 (A) 3.4 m, 680 m3   (B) 4.6 m, 920 m3
(C) 4.8 m, 960 m3   (D) 5.0 m, 1000 m3

Q2. It is proposed to construct bench terraces on a 10% hill slope. If the batter slope is ½ H : 1 V, the percentage area that will be lost for cultivation due to bench terracing is   [GATE 2012]
(A) 4.68 (B) 5.47 (C) 6.25 (D) 6.78

Q3. Bench terraces are to be constructed on a 15% hill slope. The batter slope is 1:1 and vertical interval is 2.5 m. The earth work in cutting is equal to filling. The quantum of earthwork in m3 ha–1 will be
(A) 2656   (B) 2818   (C) 4248   (D) 5312   [GATE 2014]

Q4. If the width of bench terrace is W, drop D and existing land slope S; then for 150% batter slope, the drop D will be