

Code: CE7T1

**IV B.Tech - I Semester – Regular / Supplementary Examinations –
November 2016**

**DESIGN AND DRAWING OF HYDRAULIC
STRUCTURES
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any **ONE** full question.

Note: Assume any other data if required, Khosla's curves and
Blench Curves are allowed

1. Design and draw a sloping glacis weir for the following site conditions:

Maximum discharge intensity on weir crest = 20 cumecs/m length, H.F.L. before construction of weir = 265.0 m, R.L. of river bed = 259.5 m, Pond level = 264.0 m, Height of crest shutters = 1 m, Anticipated downstream water level in the river when the weir is discharging with pond level upstream = 261.5 m, Bed retrogression = 1.0 m, Lacey's silt factor = 0.9, Permissible exit gradient = $1/7$ and Permissible afflux = 1 m.

70 M

(OR)

2. Design and draw the surplus weir of a minor irrigation tank, with the following data. Max. Flood discharge =67.4 cumecs, Crest level of the weir (F.T.L) =+12.00, Max. Water level in the tank (M.W.L) =+12.75, General ground level =+11.00, Ground level below the weir slopes off till it reaches +10.00 m in 6 m distances. Top level of tank bund =+14.50, Tank bund top width =2 m, Side slopes =2:1 (on either side of tank bund), Provision may be made to make temporary regulating arrangements to store water at times, of necessity, up to M.W.L. At level of +9.50, the foundations are of hard gravel, near the site, of work. The tank bunds are designed for a saturation gradient of 4:1 with 1 m clear cover.

70 M