

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B. Tech IV Year II Semester Advanced Supplementary Examinations October-2020
DESIGN AND DRAWING OF IRRIGATION STRUCTURES
(Civil Engineering)

Time: 3 hours

Max. Marks: 60

(Answer any one of the following **1 x 12 = 60** Marks)

- 1** Design a sloping glacis weir with the following hydraulic particulars **60M**
- Maximum discharge intensity on weir crest = 25 cumec/m
- H.F.L before construction of weir = +225.00
- R.L of river bed = +218.75
- Pond level = +224.00
- Height of crest shutters = 1.5 m
- Anticipated d/s water level in the river when = +221.50 m
the weir is discharging with pond level u/s
- Bed retrogression = 0.5 m
- Laceys silt factor = 0.9
- Permissible exit gradient = 1/7
- Permissible Afflux = 1m

OR

- 2** Design the surplus weir of a minor irrigation tank with the following data: Maximum flood Discharge = 67.45m³/sec; Crest level of the weir (F.T.L) = +12.00m. Max. Water level in tank (M.W.L) = +12.75m; General ground level = +11.00m Ground level below the weir slopes off till it reaches +10.00m in 6m distances. Top level of tank bund = +14.50m, Tank bund top Width= 2m; Side slopes = 2:1. Provision may be made to make temporary regulating arrangements to store water at times of necessity up to M.W.L. At level of 9.50m the foundations are of hard gravel near the site of work. The tank bunds are designed for a saturation gradient of 4:1 with 1m. Clear cover suitable scale. Draw half plan at top and half plan at foundation. Also draw section across the weir. **60M**

*** END ***