SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code : DDIS(13A01704) **Course & Branch**: B.Tech - CE

Year & Sem: IV-B.Tech & I-Sem **Regulation:** R13

UNIT –I

1. Design a sloping glacis weir with the following hydraulic particulars

	U/S	D/S
Full Supply Discharge	7.5 cumecs	7.5 cumecs
Bed Width	6.0m	6.0m
Bed Level	+10.00	+8.00
Full Supply Depth	1.50m	1.50m
Full Supply level	+11.50	+9.50
Top of Bank Level	+12.50	+10.50

Hard soil available for foundations below +8.00.Draw the following Plan or Sectional elevation.

UNIT –II

2 Design a Surplus Weir for a minor tank forming a group of tanks with the following data

Combined catchment area	=25.89km^2
Intercepted catchment area	=20.71km^2
Top width of the bund	=2 m
Side slopes of the bund	=2:1 on both sides
Top level of the bund	=+14.50
Maximum Water level	=+12.75
Full Tank level	=+12.00
General ground level at the site	=+11.00
Ground level slopes	=+10.00 in about 6m distance
Hard soil level	=+9.60
Satutation gradient	=4:1 with 1m clear cover

Provision is to be made to store water upto MWL in times of necessity

Draw the following longitudinal section and section across the weir with suitable scale.

UNIT-III

3 **Design a tank sluice with tower head for the data given below**

Ayacut to be irrigated	=200ha
Duty	=1000 ha/cumec
Top width of tank bund	=2m with 2:1 side slopes
The top level of bunk	=+40.00
The ground level at the site	=+34.50
Hard soil at foundation	=+33.50
The sill of the sluice at off take	=+34.00
The maximum water level in tank	=+38.00
The full tank level	=+37.00
Average low water level of the tank	=+35.00
The channel bed level	=+34.00
Full supply level	=+34.50
Bed width	= 1.25m
Side slopes of channel	=1 ½ to 1 with top of bank at +35.50

Draw the following

Half plan at top& Half plan at foundation

UNIT-IV

4. **Design a syphon aqueduct type –III for the following data**

Canal

Discharge	=35 m3/s
Bed width	=20.00m
Bed level	=+40.00
Full supply level	=+42.00
Ultimate bed level	=+39.75

Ultimate full supply level =+42.50

Average velocity in the canal =0.83m/s

Left bank top width =5.00m

Right bank top width =2.00m

Canal side slopes both inside and outside =2:1

Top of bank =+43.50

Drain

Catchment area =8.0km2

Maximum computed discharge =60m3/sec

Maximum flood level of the drain at the site crossing =+39.75

Average bed level of the drain at the site crossing =+38.00

Hard soil available at =+37.00

Draw the following

Half plan at top and half at foundation or Section across the barrel

UNIT-V

5 Design a canal Regulator cum road bridge with the following data

Hydraulic particulars of canal upstream		**Down stream**
Full supply discharge	20m3/sec	16m3/sec
Bed width	15m	15m
Bed level	+20.00	+20.00
Full supply depth	2.00m	1.75m
Full supply level	+22.00	+21.75
Top level of bank	+23.00	+19.00

The Right bank is 5m wide and left bank is 2m wide,good foundation soil is available at+19.00 and the general ground level at the site is+22.00

Draw the following

Plan or Half sectional elevation Prepared By Y Guruprasad

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