## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION - SUMMER 2016

Subject Code:180601 Date: 10/05/2016

**Subject Name:Design of Hydraulic Structures** 

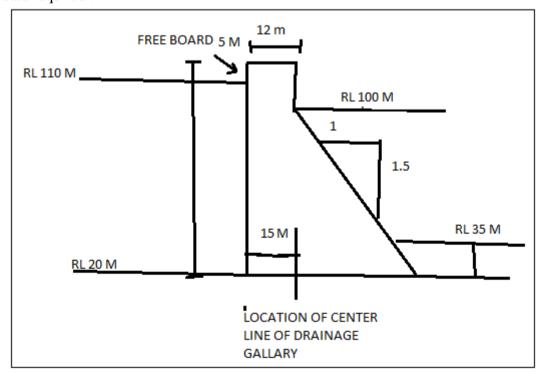
Time: 10:30 AM to 01:00 PM Total Marks: 70

## **Instructions:**

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- **07** 0.1 Explain different of forces acting on Gravity Dam (a) Describe swedish slip circle method for analysis of Embankment Dam **(b)** 
  - 07
- Give Design criteria of Sarda type fall 07 0.2 (a) **(b)** Explain design procedure for canal cross regulator and head regulator 07
  - OR
  - An earthen dam with height of 30 m given. Take free board 3 m, top width 7.5 m. 07 **(b)** u/s slope 3H:1V, and d/s slope given 2.5 H:1V, Draw phreatic line for section if horizontal filter is 40 m.
- Describe mode of failure of earthen dam 07 **Q.3** (a) 07
  - Describe selection of site for dam **(b)**

## OR

Figure is drawn for Gravity Dam section ,Compute the following forces (i) Water 07 **Q.3** (a) pressure (ii) Uplift pressure (iii) Hydrodynamic earthquake pressure (iv) Weight of dam Consider Specific weight of concrete 24 KN  $/m^2$ .  $\alpha_h = 0.1$ . Assume any other data required.



Discuss Elementary profile of Gravity dam **(b)** 

<b>Q.4</b>	(a)	Explain design criteria for ogee spillway. Also discuss about ogee profile.	<b>07</b>
	<b>(b)</b>	Explain Bucket type energy dissipater	07
		OR	
Q.4	(a)	Explain Design of glacis type fall	<b>07</b>
	<b>(b)</b>	Describe seepage control in earthen dam	<b>07</b>
Q.5	(a)	Describe Foundation treatment of gravity dam	07
	<b>(b)</b>	Describe classification of dam	<b>07</b>
		OR	
Q.5	(a)	Why canal fall is provided in canal? Enlist different types of fall. And describe Rapid falls	07
	<b>(b)</b>	Enlist different types of stilling basin and explain any one	07

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