

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.

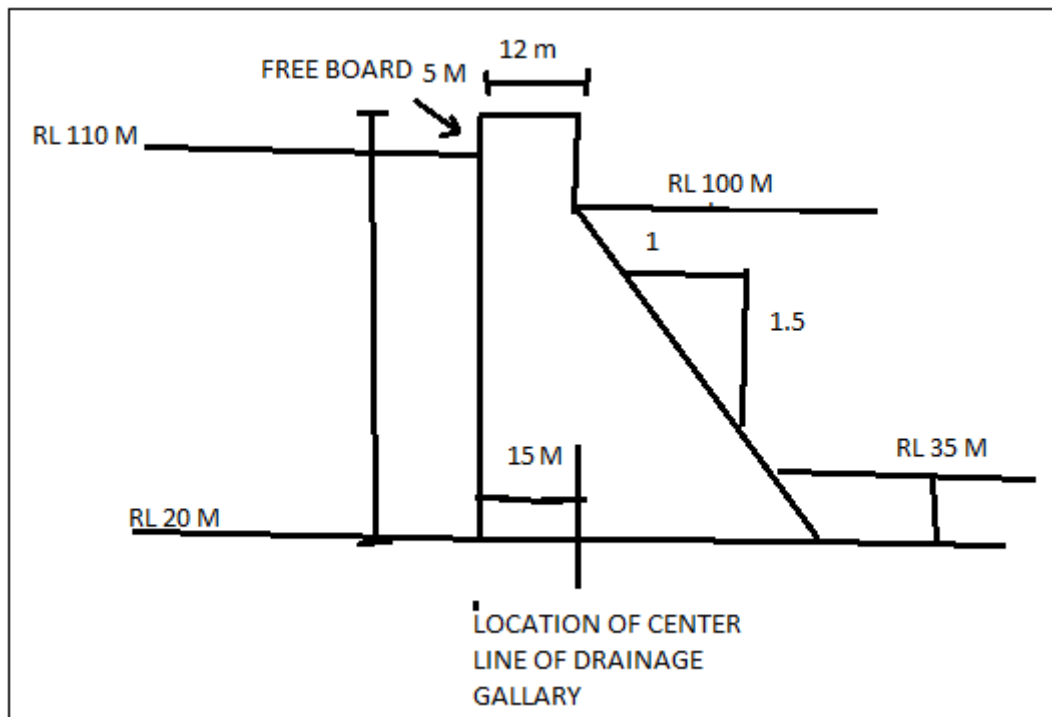
- Q.1** (a) Explain different of forces acting on Gravity Dam **07**
 (b) Describe swedish slip circle method for analysis of Embankment Dam **07**
- Q.2** (a) Give Design criteria of Sarada type fall **07**
 (b) Explain design procedure for canal cross regulator and head regulator **07**

OR

- (b) An earthen dam with height of 30 m given. , Take free board 3 m , top width 7.5 m, 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. **07**
- Q.3** (a) Describe mode of failure of earthen dam **07**
 (b) Describe selection of site for dam **07**

OR

- Q.3** (a) Figure is drawn for Gravity Dam section ,Compute the following forces (i) Water 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 . **07**



- (b) Discuss Elementary profile of Gravity dam **07**

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