

**Bhagwan Mahavir College of Engineering and  
Technology, Surat**

**Assignment-1**

**Introduction**

**Date:-**

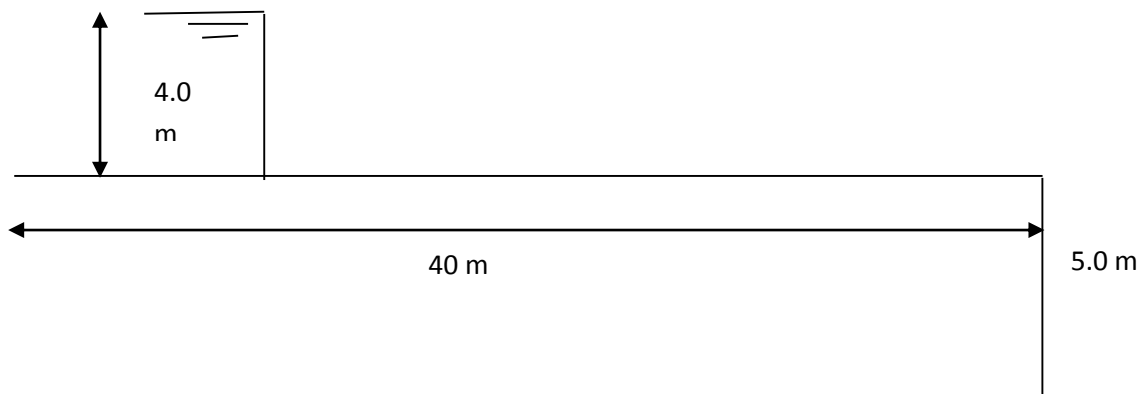
- 1) Describe irrigation and write history of irrigation development in India.
- 2) Explain different types of irrigation in brief.
- 3) What are the various methods of applying water to crops? Explain drip irrigation method with advantages and disadvantages.
- 4) What is duty? Explain various factors affecting the duty.
- 5) Discuss various methods of assessment of irrigation water.
- 6) Describe different types of irrigation channels based on alignment.
- 7) Explain the various irrigation efficiencies.
- 8) Describe the various methods of surface irrigation.
- 9) Define: 1) Delta. 2) Base period. 3) Crop period.
- 10) Define: 1) Culturable command area. 2) Unculturable command area. 3) Intensity of irrigation.
- 11) Enlist different methods of irrigation and describe (i) check basin method and (ii) sprinkler irrigation method
- 12) Describe benefit and ill effects of irrigation
- 13) The culturable command area of a water course is 1500 hectare. Intensities of irrigation of sugarcane and wheat crops are 25 % and 50 % respectively. The duties for the crops at the head of the water course are 700 hectare /cumec and 1750 hectares /cumec respectively. Find the discharge required at head of water course.

**Bhagwan Mahawir College of Engineering and  
Technology, Surat**

**Assignment-2**  
**Diversion Works**

**Date:-**

- 1) Differentiate between Weir and barrage.
- 2) Sketch the layout of a typical diversion headwork and describe briefly the functions of the various components of diversion head works.
- 3) Describe Bligh's creep theory for the design of weirs on permeable foundations and what are the limitations of Bligh's creep theory.
- 4) Write a brief note on Khosla's theory of design of weirs on permeable foundations.
- 5) Explain Khosla's method of independent variables.
- 6) Describe causes of failure of weirs and briefly explain measure to prevent such failure.
- 7) Write short note on: Exit gradient and safe gradient.
- 8) Determine the uplift pressure at the salient points E, D and C of the pile at d/s end of the impervious floor as shown in figure. Also determine the exit gradient. Use Khosla's theory.



**Bhagwan Mahawir College of Engineering and  
Technology, Surat**

**Assignment-3**  
**(Storage works)**

**Date:-**

- 1) How are dams classified? Discuss in detail.
- 2) Discuss in brief the causes of failure of earthen dams.
- 3) Explain different types of settlements in a rock fill dam.  
How they can be eliminated?
- 4) Explain various Forces acting on a gravity dam.
- 5) Write short notes on spillways gates.
- 6) Explain different types of Spillways?
- 7) Describe Energy dissipation works?

**Bhagwan Mahawir College of Engineering and  
Technology, Surat**

**Assignment-4**  
**(Distribution works)**

**Date:-**

- 1) Enumerate various types of canal linings and explain all in brief.
  - 2) What do you mean by lining a canal? What are the advantages of it?
  - 3) Explain Balancing depth of canal.
  - 4) Describe types and benefits of lining of canal.
  - 5) Draw cross section of canal in fully cutting and canal in full embankment.
  - 6) Explain conveyance, distribution and application efficiencies.
  - 7) Design a lined concrete channel, trapezoidal in section to carry a discharge of 200 cumec at a slope of 30cm/km. The Manning's  $N = 0.017$ , and side slopes are 1.5:1. The limiting velocity in the channel is 2m/s.
- 
- 1) Write design procedure for irrigation channel according to Kennedy's theory.
  - 2) What is Lacey's regime theory? Derive Lacey's non-regime flow equation.

**Bhagwan Mahawir College of Engineering and  
Technology, Surat**

**Assignment-5**  
**(Regulating and Cross Drainage Works )**

**Date:-**

- 1) Describe various types of C D works for the canal with the help of sketches.
- 2) What are the canal regulation works? Explain necessity and location of canal falls.
- 3) What is canal escape? Discuss different types of canal escapes.
- 4) What is diversion head work? Describe the function of each component of diversion head work with a neat sketch.
- 5) Why canal falls are provided? Describe any two types of falls commonly used in irrigation function.
- 6) Explain the function of cross regulator and head regulator.
- 7) Explain different types of Aqueducts and discuss the factors affecting the selection of a suitable type of aqueduct.
- 8) Describe function of (i) divide wall (ii) silt excluder (iii) under sluice portion in diversion head work.
- 9) Draw sketch of siphone aqueduct. Also describe the same.
- 10) Explain sarda type of fall.

**Bhagwan Mahawir College of Engineering and  
Technology, Surat**

**Assignment-6**  
**(Water logging & Reclamation )**

**Date:-**

- 1) What is water logging? Explain causes and remedial measures for water logging.
- 2) What is Land Reclamation? How to Prevent it?