



IV B.Tech I Sem Regular End Examination, Nov/Dec 2022

Irrigation and Hydraulic Structures

(CIVIL)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

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|-------|--|----|-----|-----|
| 1. a) | What is life of reservoir | 2M | C01 | BL1 |
| b) | Define reservoir and write down its uses | 2M | C01 | BL1 |
| c) | Write down the importance of factor of safety | 2M | C02 | BL1 |
| d) | Define elementary profile | 2M | C02 | BL1 |
| e) | Define spillway and write down its uses | 2M | C03 | BL1 |
| f) | What is seepage and how seepage will occur in earthen dams | 2M | C03 | BL1 |
| g) | How exit gradient is important in the design of weirs | 2M | C04 | BL1 |
| h) | Draw launching apron along with its components | 2M | C04 | BL1 |
| i) | List out various types of canal modules | 2M | C05 | BL1 |
| j) | Compare aqueduct and super passage | 2M | C05 | BL2 |

PART- B**(10*5 Marks = 50 Marks)**

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|------|---|----|-----|-----|
| 2 a) | What is meant by Reservoir? Discuss briefly the different types of reservoirs and the purpose served by each type. | 5M | C01 | BL2 |
| b) | Describe briefly the techniques that are employed for computing the storage capacity of a reservoir for different water surface elevations. | 5M | C01 | BL2 |

OR

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|------|--|----|-----|-----|
| 3 a) | Explain the zones of storage of a reservoir with a neat sketch. | 5M | C01 | BL4 |
| b) | List out different types of dams with their merits and demerits. | 5M | C01 | BL1 |
| 4 a) | What do you mean by the elementary profile of a gravity dam? | 5M | C02 | BL1 |
| b) | What are the advantages and disadvantages of a gravity dam over the other types? | 5M | C02 | BL1 |

OR

- 5 a) What are the main points to be considered while selecting a site for a gravity dam construction? 5M C02 BL1
 b) Explain briefly with neat sketches the different forces that may act on a gravity dam. Indicate their magnitudes, directions and locations. 5M C02 BL4
- 6 a) What is meant by pore water pressure and what is its significance in the design of earthen dams? 5M C03 BL1
 b) What are rockfill dams and what are their advantages over earthen dams? 5M C03 BL1
- OR**
- 7 a) What are the precautions that you would take while constructing an earth dam? 5M C03 BL1
 b) Explain the Swedish slip circle method of analyzing the stability of an earth dam slopes. 5M C03 BL4
- 8 a) What is the difference between a weir and a barrage? Why does a barrage preferred to a weir in modern days? 5M C04 BL1
 b) How does a diversion weir aligned? Draw a neat sketch showing the different components of a diversion weir scheme. 5M C04 BL1
- OR**
- 9 a) Describe briefly some of the effects of silting in rivers. 5M C04 BL2
 b) Describe briefly a method of removal of silt accumulation behind a river regulator. 5M C04 BL2
- 10 a) What is meant by Canal drops? Why are canal drops constructed in a canal system? 5M C05 BL1
 b) Enumerate the various types of canal drops which have been used since olden days. 5M C05 BL5
- OR**
- 11 a) What is meant by falls and where are they located? 5M C05 BL1
 b) Discuss briefly the components of various types of falls with neat sketches, also discuss the suitability of each type. 5M C05 BL2

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CO-Course Outcome

BL - Blooms Taxonomy Levels