

Roll No. ....

Total Pages : 03

**BT-7/M-20**

**37234**

**IRRIGATION ENGINEERING-II**

**CE-403-N**

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. Assume any missing data.

**Unit I**

1. (a) What are roughning devices ? Discuss their different types along with their use in falls construction. **8**  
(b) What is difference between distributory head regulator and cross regulator ? **7**

2. Given data : **15**

Discharge - 12 cumes

Bed level u/s - 105 m

Side slope of channel - 1:1 m

Bed level d/s - 102.8 m

Full supply level u/s - 105.2 m

Bed width u/s and d/s - 1.0 m

Soil type - Good loam

Assume Bligh's constant - 6

Design a 1.5 metre Sarda type fall for above given data.

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## **Unit II**

3. (a) Explain an aquaduct and siphon aquaduct with suitable diagram. **10**
- (b) Draw and explain typical layout of a level crossing. **5**
4. (a) Draw the layout of diversion head works and show its components. **8**
- (b) What is silt excluder ? Give its advantages and disadvantages. **7**

## **Unit III**

5. (a) State the factors which affect the selection of site for dam. **10**
- (b) Discuss the various modes of failure of a gravity dam. **5**
6. (a) Describe the seepage analysis for earthen dams, for isotropic soils and non-isotropic soils. **10**
- (b) What is phreatic line ? Discuss its significance. **5**

#### **Unit IV**

7. (a) What is spillway ? Discuss its types. **8**  
(b) Discuss use and principle of working of silt excluder. **7**
8. Explain the following :  
(a) Standard Stilling basin **5**  
(b) USBR Basin. **10**