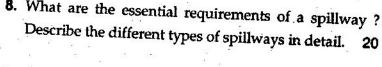
SECTION - D

- 8. What are the essential requirements of a spillway?
- 9. (a) Discuss various methods used for energy dissipation below spillways.
 - Explain the design procedure for the standard stilling basin type I.





Roll No.

24379

B. Tech 6th Semester (Civil)

Examination - May, 2016

IRRIGATION ENGINEERING - I

Paper: CE-304-F

Time: Three Hours]

[Maximum Marks: 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Question No. 1 is compulsory. Attempt one question from each Section. All questions carry equal marks Assume missing data, if any, suitably

1. (a) Canal escape

- (b) Cistern element in fall
- Differentiate between siphon and supepassage
- (d) Classification of cross drainage works
- (e) Modes of failure of gravity dam
- Constant angle arch dam
- Drum gates
- (h) Functions of a spillway

24379-7,100-(P-4)(Q-9)(16)

P. T. O.

24379-7,100-(P-4)(Q-9)(16)

SECTION - A

- 2. (a) What do you mean by canal fall? Describe in detail the necessity and location of canal fall.
 - (b) Describe principal of design of Sarda type fall. What are its salient features?
- 3. (a) Define silt ejector. Describe the different devices to control silt entry into the off-taking channel. 10
 - (b) What is roughening device? Explain the design of different roughening devices.

SECTION - B

4. Design a siphon aqueduct with the following data: 20

Discharge of canal = 56 cumecs

Bed width of canal = 32 m

Canal depth = 1.98 m

Bed level of canal = 267.00 m

High flood discharge of the drainage = 425 cumecs

Bed level of the drainage =265.50 m

HFL of the drainage = 268.20 m

General ground level = 267.20 m

24379-7,100-(P-4)(Q-9)(16) (2)

- 5. (a) Explain Khosla's method of independent variables. Also describe the different corrections applied in this method.
 - (b) Explain Bligh's Creep theory for design of weirs on permeable foundations.

SECTION - C

- 6. (a) Explain the design principles for safe design of earth dam.
 - (b) What are the different types of dams? What are the points to be considered for the selection of site for a dam?
- 7. (a) Explain the method of plotting phreatic line for an earth dam with horizontal filter at the downstream. 10
 - Design the practical profile of a gravity dam of stone masonry with the following data:

R.L. HFL = 1280 m

RL of base of dam = 1250 m

Specific gravity of masonry = 2.4

Safe compressive for masonry of dam = $120 t/m^2$

(3)