Roll No.



24379

B. Tech. (Civil) 6th Semester Examination – May, 2015

IRRIGATION ENGINEERING - I

Paper: CE-304-F

Time: Three Hours]

[Maximum Marks: 100

Before answering the questions, 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: Attempt five questions in all, selecting one question from each Section. Question No. 1 is compulsory.All questions carry equal marks. Assume missing data, if any, suitably.

1. Explain the following:

20

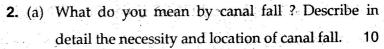
- (a) Straight Glacis fall
- (b) Devices to control entry of silt
- (c) Canal siphon and level crossing
- (d) Importance of cross drainage works in canal project
- (e) Classification of dams

24379-4450-(P-4)(Q-9)(15)

P. T. O.

- (f) Cutoffs and drainage galleries
- (g) Stiling basins
- (h) Radial gates

SECTION - A



- (b) Describe in detail the design of cistern clement. 10
- 3. (a) What do you understand by canal escape?

 Describe the different types of canal escapes with neat diagram.
 - (b) What do you mean by head regulator? Explain the functions of head regulator and cross regulator in detail.

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

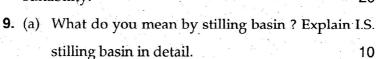
24379-4450-(P-4)(Q-9)(15) (2)



5. (a) Draw a neat layout plan of diversion canal head
works. Briefly describe the various components of
the system and their functions.
(b) Explain the salient features of Khosla's theory.
How it is used in the design of permeable
foundations? Describe briefly. 10
SECTION - C
6. (a) Explain and elaborate the importance of seepage
through earthen dam. What precautions should
be taken to control the seepage?
(b) What are the different types of arch dams?
Describe briefly. Also explain the advantages and
disadvantages of arch dams. 10
7. (a) What do you mean by elementary profile of a
gravity dam? Differentiate between low gravity
dam and high gravity dam.
(b) Design the practical profile of a gravity dam of
stone masonry with the following data: 10
R.L. HFL = 1280 m
RL of base of dam = 1250 m
Specific gravity of masonry = 2.4
Safe compressive for masonry of dam = $120 \text{ t/m}^2 10$
24379-4450-(P-4)(Q-9)(15) (3) P. T. O.

SECTION - D

8. What do	you mean by	spillway ca	pacity?	Descri	be the
different	types of	spillways	along	with	their
suitabilit	y.				20



(b) Discuss various methods used for energy dissipation below spillways.



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