

24514

B.Tech. 7th Semester (F) Scheme (Civil)

Examination, December-2018

IRRIGATION ENGG-II

Paper- CE-407-F

Time allowed : 3 hours]

[Maximum marks : 100

Note: Attempt five questions in all, selecting one question from each section. Question No. 1 is Compulsory. All questions carry equal marks.

1. Explain: 10×2=20
- (a) Selection of type of cross-drainage work
 - (b) Coefficient of discharge
 - (c) Ogee spillway
 - (d) Importance of rock toe and relief wells.
 - (e) Formula for hyperbolic transition.
 - (f) Why are spillways provided in dam?
 - (g) What is the width of launching apron of the guide banks?
 - (h) Factors governing design of wiers
 - (i) What are Canal falls and where are they located?
 - (j) Mention the factors governing spacing of groynes.

Section-A

2. What is hydraulic design of weir? Explain the design of following components of weir. 20
- (i) U/S cutoff

(2)

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(ii) Floor

(iii) Protection Work- Make sketch where necessary.

3. The following data pertains to a bridge site of a river.

Maximum discharge = 100 m

Average diameter of river bed material = 0.1 m

Design and sketch Bell's Bunds including the launching apron to train the river. Assume sufficient amount of boulders near the site. 20

Section-B

4. What do you mean by flood routing? Explain the procedure of different methods of flood routing in detail. 20

5. Design a syphon aqueduct with following data : For Canal.

Discharge = 56 Cumecs

Bed width = 32 m

FS depth = 1.98 m

R.L of bed = 267 m

For drainage

High flood discharge = 450 cumecs

HFL = 268.20 m

General bed level = 265.50

General ground level = 267.2 m

(3)

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Section-C

6. Design a 1.2 m Sarda type fall for a Canal having discharge of 13 cumecs. Data given 20

Bed level u/s = 101m

Side slopes of Channel = 1:1m

Bed level d/s = 100.1m

FSL Upstream = 105 m

Bed width U / s and D / S = 1m

Bligh's Coefficient = 6

7. (a) Describe methods adopted for controlling seepage through body of the dam and its foundation. 10
(b) Describe with neat sketches, how top seepage line is drawn in a homogeneous dam without any arrangement for drainage. 10

Section-D

8. Discuss briefly the design principles that are involved in the design of an ogee spillway. 20
9. (a) What are the steps involved in design of stilling basin? 10
(b) Explain briefly the design procedure of elements of an earth dam. 10