

**B. Tech. (Civil) 6th Semester (G Scheme)
Examination, July-2022**

IRRIGATION ENGINEERING

Paper-PCC-CE-302-G

Time allowed : 3 hours]

[Maximum marks : 75

Note : (i) Question No. 1 is compulsory. Attempt one question from each section.

(ii) All questions carry equal marks.

(iii) Assume missing data, if any, suitably.

1. Describe the following : 15
- (a) Field capacity
 - (b) Enumerate the advantages and disadvantages of tube well irrigation.
 - (c) Differentiate between siphon and super passage
 - (d) Classification of cross drainage works
 - (e) Requirements of spillway
 - (f) Guide banks

Section-A

2. (a) Define base period and crop period. Give the relation between duty delta and base period. 7

(b) What is Drip irrigation ? Describe briefly the component parts of drip irrigation system. 8

3. (a) What are the various components of flow irrigation system ? Describe lift irrigation and flow irrigation in detail. 7

(b) What are the uses of irrigation ? Differentiate between perennial and inundation irrigation. 8

Section-B

4. (a) Define silt ejector. Describe the different devices to control silt entry into the off-taking channel. 8

(b) What is canal head work ? Describe the various components of canal head work. 7

5. Design a siphon aqueduct with the following data :

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 drainage = 265.50 m

HFL of the drainage = 268.20 m

General ground level = 267.20 m

15

3303

Section-C

6. (a) What are the requirements of a canal outlet ? Describe the different types of canal outlets with their characteristics. 7

(b) A water course is to take a flow of 0.04 cumec. Design an open flume outlet from the connected distributary if the full supply depth in the distributary is 70 cm. 8

7. (a) What are the different types of spillway ? Describe any two types of spillway in detail with neat diagram. 8

(b) What do you mean by stilling basin ? Explain I.S. stilling basin in detail. 7

Section-D

8. (a) What are the objectives of river training works ? Describe in detail the methods and planning of river training. 8

(b) Describe in detail different causes of water logging. Also describe its preventive measures. 7

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9. Describe the following :

- (a) Necessity and classification of drains.
- (b) Land drainage and land reclamation
- (c) Spur and cutoffs

15